





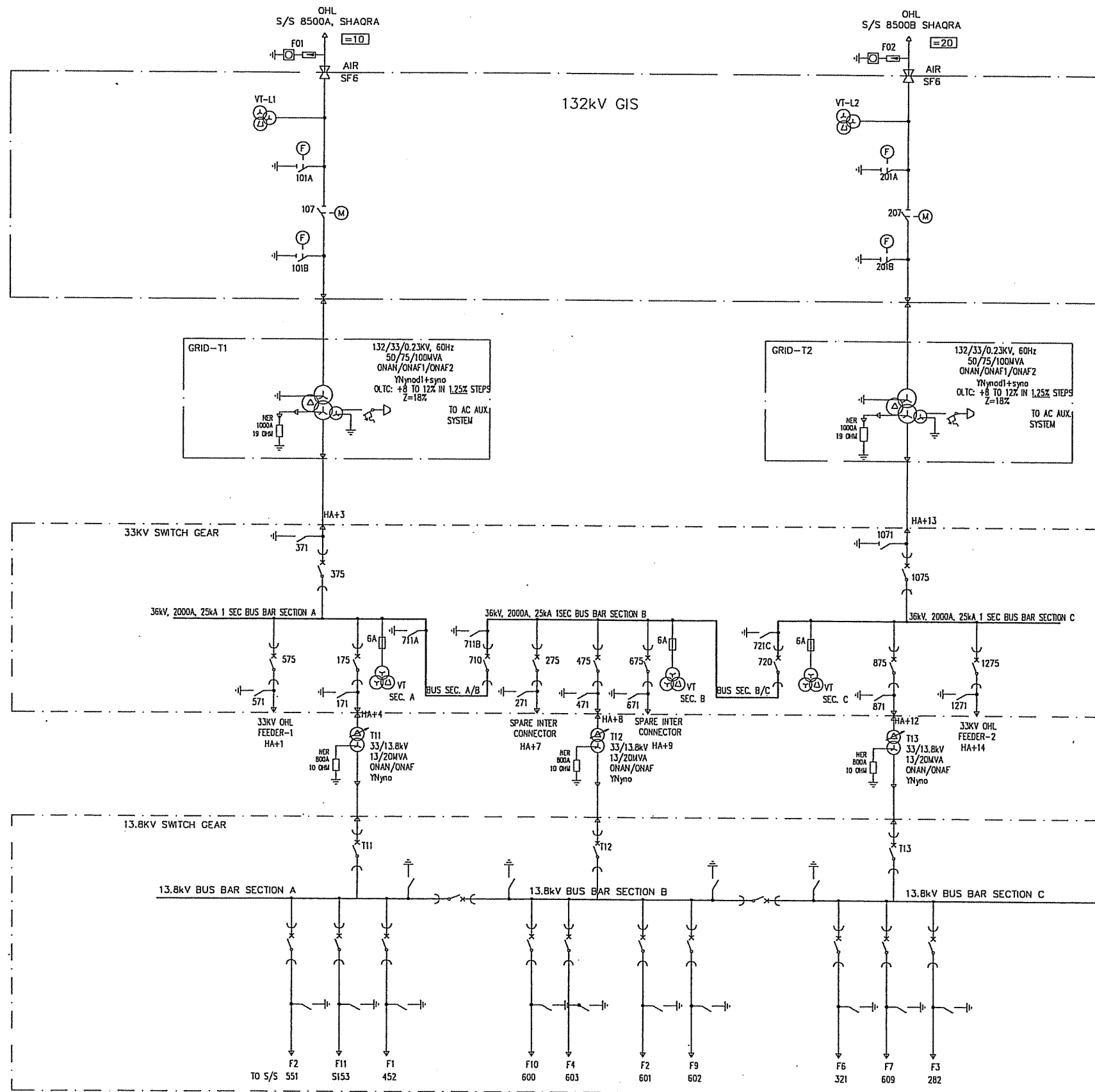
[illegible]

CONTRACTOR : SAUDI SERVICES FOR ELECTRO MECHANIC WORKS CO. LTD.
CLIENT : SAUDI ELECTRICITY COMPANY, CENTRAL REGION BRANCH
PROJECT : REINFORCEMENT OF S/S 8501, 8808 & 8812
SUBSTATION : S/S 8501
CONTRACT NO. : 516/20/3
TITLE : OPERATION SINGLE LINE DIAGRAM - S/S 8501

CLIENT KINGDOM OF SAUDI ARABIA SAUDI ELECTRICITY COMPANY CENTRAL REGION BRANCH PROJECTS MANAGEMENT DEPARTMENT				المالك المملكة العربية السعودية الشركة السعودية للكهرباء فرع المنطقة الوسطى ادارة تنفيذ المشاريع	
CONTRACTOR : SAUDI SERVICES FOR ELECTRO MECHANIC WORKS CO. LIMITED P.O BOX 6341, RIYADH 11442				المقاول الشركة السعودية لخدمات الأعمال الكهربائية والميكانيكية المحدودة ص ب ٦٣٤١ الرياض ١١٤٤٢	
PROJECT NO. : 516/20/3		رقم العقد ٣/٢٠/٥١٦			
PROJECT REINFORCEMENT OF 132 KV SUBSTATIONS NOS. 8501, 8808 & 8812		المشروع تعزيز محطات جهد ١٣٢ ك ف ارقام ٨٨١٢ , ٨٨٠٨ , ٨٥٠١			
DESIGN BY	KARTHIK	DATE	: 01 29		TITLE: OPERATION SINGLE LINE DIAGRAM 8501
DRAWN BY	MIM	SCALE	: NTS		
DESIGNER :  ABB AUTOMATION CO. LTD. شركة ايه بي بي لأجهزة التحكم الآلي المحدودة P.O BOX 414 RIYADH 11383 KINGDOM OF SAUDI ARABIA					
DWG. NO. S10114-AAAAA		SHEET # 000 REV. # 00			
OPERATIONAL SINGLE LINE DIAGRAM (EXISTING/MODIFIED)		Resp dept AUT Rev ind OO Lang en Sheet 000 Cont 001			
 ABB Electrical Ind.		S10114-AAAAA			

AS BUILT

Based on				Prepared 01 29 KARTHIK
				Approved 01 29 KAMAL AL-MUHANNA
				S/S 8501 , 132/33/13.8KV
				SEC-CRB, CONTRACT No. 516/20/3
Rev In	Revision	Appd	Year Week	
OO	AS BUILT	RG	03 46	



LEGENDS	
	POWER TRANSFORMER
	33kV CIRCUIT BREAKER
	3-PHASE VOLTAGE TRANSFORMER
	EARTHING SWITCH FAST ACTING
	132kV ON LOAD DISCONNECTOR
	MOULDED CASE CIRCUIT BREAKER
	OHL FEEDER
	AC DISTRIBUTION BOARD
	UGF CABLE SEALING HEAD
	OHL CONNECTION - (GAS TO AIR BUSHING)
	SURGE ARRESTOR
	NEUTRAL EARTHING RESISTOR
	BUSHING CABLE CONNECTION
	FUSE (RATINGS SHOWN)

CLIENT KINGDOM OF SAUDI ARABIA SAUDI ELECTRICITY COMPANY CENTRAL REGION BRANCH PROJECTS MANAGEMENT DEPARTMENT		المملكة العربية السعودية الشركة السعودية للكهرباء فرع المنطقة الوسطى إدارة تنفيذ المشاريع	
CONTRACTOR : SAUDI SERVICES FOR ELECTRO MECHANIC WORKS CO. LIMITED P.O BOX 6341, RIYADH 11442		المقاول الشركة السعودية لخدمات الأعمار الكهربائية والميكانيكية المحدودة من ب ٦٣٤١ الرياض ١١٤٤٢	
PROJECT NO. : 516/20/3		رقم المشروع ٥١٦ / ٢٠ / ٣	
PROJECT REINFORCEMENT OF 132 KV SUBSTATIONS NOS. 8501, 8508 & 8512		المشروع تعزيز محطات جهد ١٣٢ ك ف رقم ٨٥٠١ , ٨٥٠٨ , ٨٥١٢	
DESIGN BY KARTHIK	DATE : 01.35	TITLE: OPERATIONAL SINGLE LINE DIAGRAM (EXISTING)-S/S 8501	
DRAWN BY MM	SCALE : NTS		
DESIGNER : ABB ABB AUTOMATION CO. LTD. شركة إيه بي بي لأجهزة التحكم الكلي المحدودة P.O BOX 414 RIYADH 11383 KINGDOM OF SAUDI ARABIA		DWG. NO. S10114-AAAAA	SHEET # 001 REV. # 00
Resp dept AUT		Rev ind 00	Lang en
S10114-AAAAA		Sheet 001	Conl. 002

File name

00 AS BUILT

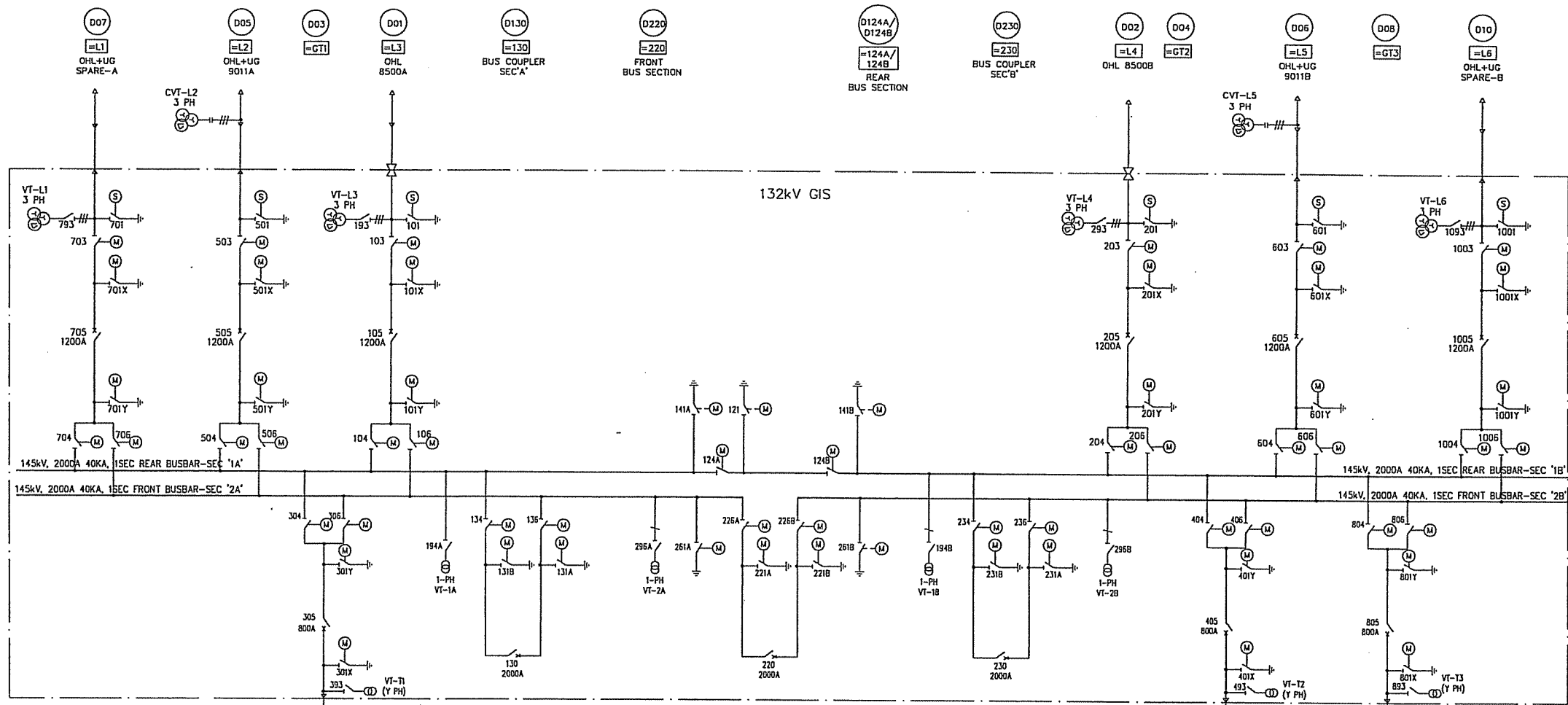
Rev In Revision

Prepared 01 35 KARTHIK
Approved 01 35 KAMAL
S/S 8501, 132/33/13.8kV
SEC-CRB, CONTRACT NO.: 516/20/3

OPERATIONAL SINGLE LINE DIAGRAM
(EXISTING)

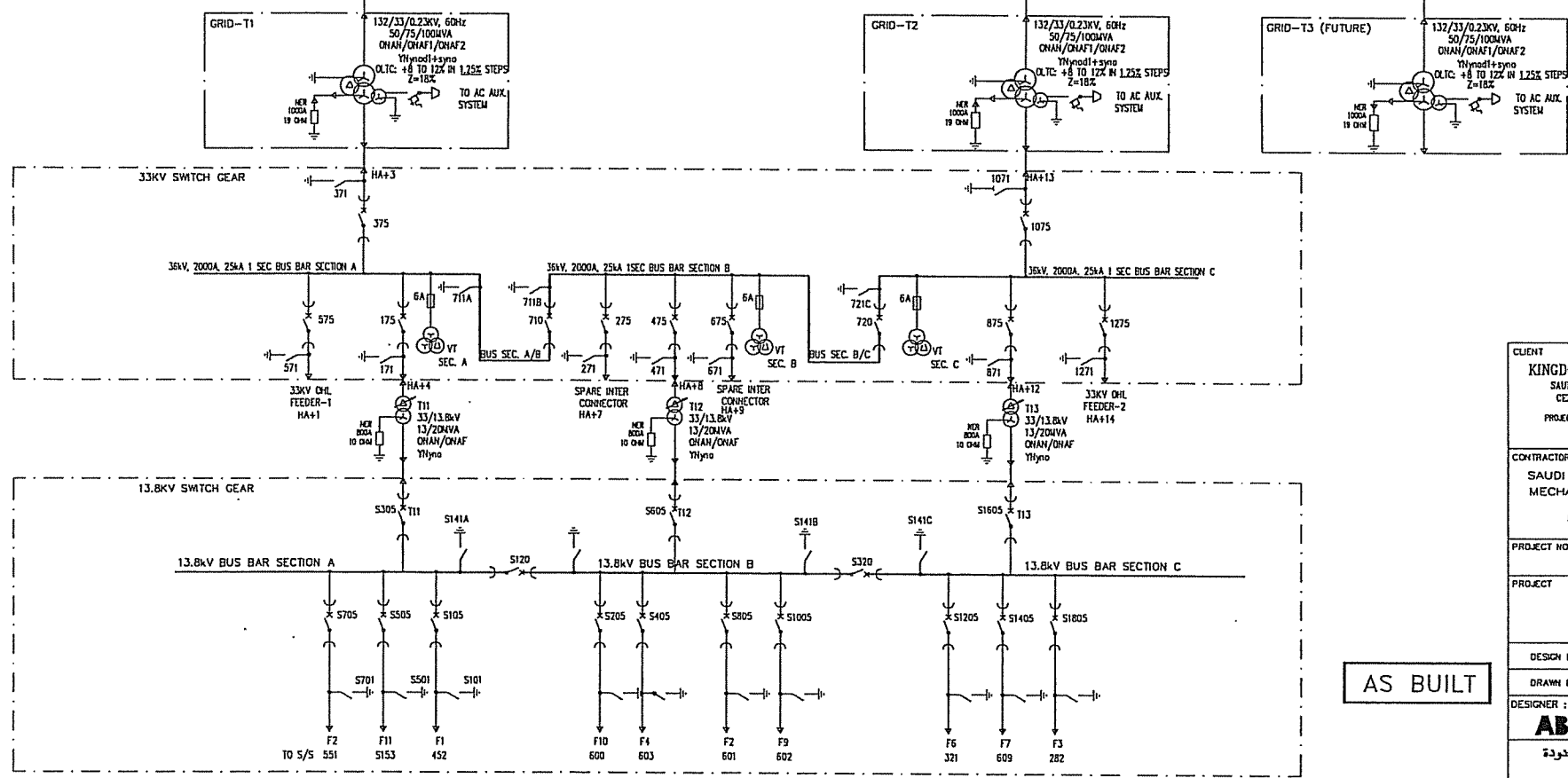
ABB ABB Electrical Ind.

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LEGENDS	
	POWER TRANSFORMER
	33kV CIRCUIT BREAKER
	3-PHASE - GS VOLTAGE TRANSFORMER WITH MANUAL OPERATING DEVICE
	CAPACITIVE VOLTAGE TRANSFORMER (3 PHASE)
	132kV CIRCUIT BREAKER
	132kV 1-PHASE VOLTAGE TRANSFORMER WITH MANUAL OPERATING DEVICE
	MAINTENANCE EARTHING SWITCH (MOTOR DRIVEN OPERATION)
	HIGH SPEED EARTHING SWITCH (MOTOR DRIVEN SPRING CHARGED OPERATION)
	DISCONNECTING SWITCH (MOTOR DRIVEN OPERATION)
	MOULDED CASE CIRCUIT BREAKER
	OHL FEEDER
	AC DISTRIBUTION BOARD
	UCF CABLE SEALING HEAD
	OHL CONNECTION - (GAS TO AIR BUSHING)
	NEUTRAL EARTHING RESISTOR
	BUSHING CABLE CONNECTION
	FUSE (RATINGS SHOWN)

132kV DOUBLE BUSBAR GIS
MAKE: HICO
RATED: 145kV, 2000A AT 55°C
SHORT CIRCUIT RATING: 40KA, 1SEC.
NOTE:
1. THE EXISTING 132/33kV GT1/GT2 FEEDER ARRANGEMENT FED FROM 8500 S/S TO BE MODIFIED TO FEED FROM 132kV GIS-DOUBLE BUSBAR, AS PER THE ARRANGEMENT SHOWN IN THIS SLD



AS BUILT

CLIENT KINGDOM OF SAUDI ARABIA SAUDI ELECTRICITY COMPANY CENTRAL REGION BRANCH PROJECTS MANAGEMENT DEPARTMENT		المملكة العربية السعودية شركة الكهرباء المركزية إدارة تنفيذ المشاريع	
CONTRACTOR : SAUDI SERVICES FOR ELECTRO MECHANIC WORKS CO. LIMITED P.O BOX 6341, RIYADH 11442		المقاول شركة السعودية لخدمات الأعمار الكهربائية والميكانيكية المحدودة ص ب ٦٣٤١ الرياض ١١٤٤٢	
PROJECT NO. : 516/20/3		رقم المشروع ٥١٦ / ٢٠ / ٣	
PROJECT REINFORCEMENT OF 132 KV SUBSTATIONS HOS. 8501, 8808 & 8812		تعزيز محطات جهد ١٣٢ ك ف لرقم ٨٥٠١, ٨٨٠٨, ٨٨١٢	
DESIGN BY : KARTHIK	DATE : 01 35	TITLE: OPERATIONAL SINGLE LINE DIAGRAM S/S 8501	
DRAWN BY : HR	SCALE : NTS		
DESIGNER : ABB AUTOMATION CO. LTD. شركة إيه بي للآليزاتة للتحكم الكهربائي المحدودة P.O BOX 414 RIYADH 11383 KINGDOM OF SAUDI ARABIA		DWG. NO. S10114-AAAAA SHEET # 002 REV. # 00	
Resp dep: AUT		Rev ind: 00	Lang: en
S10114-AAAAA		Sheet 002 Cont. --	

File name		Prepared 01 35 KARTHIK		OPERATIONAL SINGLE LINE DIAGRAM (MODIFIED)	
		Approved 01 35 KAMAL		ABB Electrical Ind.	
		S/S 8501, 132/33/13.8kV			
		SEC-CRB, CONTRACT NO.: 516/20/3			
00	AS BUILT	RG	03	46	
Rev	In Revision	Appd	Year	Week	

ITEM	DESIGNATION	SHEET
=1	33/13,8kV TRANSFORMER BAY T11	1
=2	33kV INTERCONNECTOR LINE	51
=3	33kV INCOMING TRANSFORMER BAY	101
=4	33/13,8kV TRANSFORMER BAY T12	151
=5	33kV INTERCONNECTOR LINE	251
=8	33/13,8kV TRANSFORMER BAY T13	351
=10	33kV INCOMING TRANSFORMER BAY	451
=71	33kV BUSBAR ZONE 1	651
=T11	33/13,8kV TRANSFORMER T11	701
=72	33kV BUSBAR ZONE 2	751
=T12	33/13,8kV TRANSFORMER T12	801
=73	33kV BUSBAR ZONE 3	851
=T13	33/13,8kV TRANSFORMER T13	901
=AB	33kV BUSSECTION	951
=BC	33kV BUSSECTION	1001

الخط المخطط
AS BUILT

الشركة السعودية الموحدة للكهرباء بالمنطقة الوسطى	
SCECO CENTRAL PROJECTS MANAGEMENT DEPARTMENT	
CONTRACT NO. 503/9/3	PROJECT: WASHAM, DAWADMI & SUDAIR PROJECT
132/33 KV-MAJMA'AH S/S 8501	CONTRACTOR: ACEM - ASEA
Rev Ind	Sheet
Lang	0.10
Rev Ind	Cont
2	1

SYMBOL ID /D:XL824028-FBR:0.10/0		92-07-02 18.50	
2	SCECO SNAG	LS	92 26
1	AS BUILT	LS	91 21
Rev Ind	Revision	Appd	Year Week
2			

S/S 8501
33kV SWG
LIST OF CONTENTS

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept Year Week
TDCF 90 36

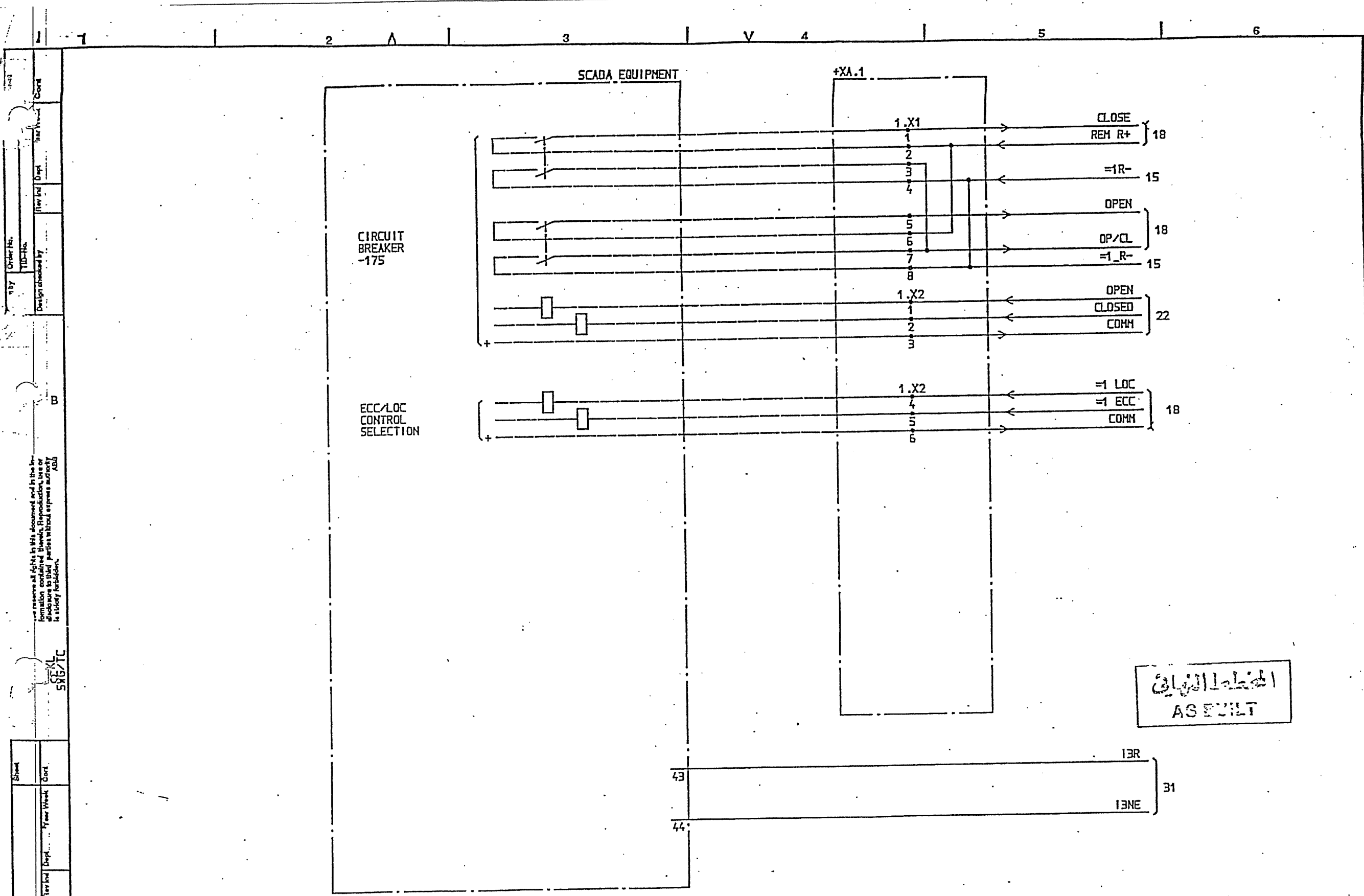
L 9743.1017
XL 824 028-FBR

AL 1010
101010

ITEM	DESIGNATION	SHEET
+XA.1	SCADA INTERFACE EQUIPMENT	12
+HA.4	AUX. VOLTAGE SUPPLY	15
	HEATING AND LIGHTING	16
	C.B. OPERATION CIRCUITS	18
-175	CIRCUIT BREAKER EQUIPMENT	19
	INTERLOCKING	23
-171	EARTH SWITCH EQUIPMENT	24
	TRANSFORMER DIFFERENTIAL PROT	27
	OVERCURRENT PROT	28
-T11	CURRENT TRANSFORMER	30

الخط النهائي
AS BUILT

Drawn by	Form No.	Sheet	Drawn by	Form No.	Sheet	Drawn by	Form No.	Sheet
Design	Design	Design	Design	Design	Design	Design	Design	Design
Rev Ind	Revision	Rev Ind	Revision	Rev Ind	Revision	Rev Ind	Revision	Rev Ind
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2		2		2		2		2
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6		6		6		6		6
SYMBOL ID /D:XL824028-FBR:1/0			DATE 91-05-31 12.10			=1		
33/13,8kV TRANSFORMER BAY T11			LIST OF CONTENTS			CIRCUIT DIAGRAM		
S/S 8501 132/33kV			SCECO CENTRAL SAUDI ARABIA			S/S 8501 132/33kV		
ABB HV SWITCHGEAR			TFC 90 10			L 9743.1017		
XL 824 028-FBR						XL 824 028-FBR		



المشاور
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SYMBOL ID /D:XL824028-FBR:12/0

DATE 91-05-31 12.10

1	AS BUILT	LS	91 21	33/13,8kV TRANSFORMER BAY T11
2				SCADA INTERFACE EQUIPMENT

Design checked by
B NILSSON
Drawing checked by
S STRIDSHAN
Drawn by
IA

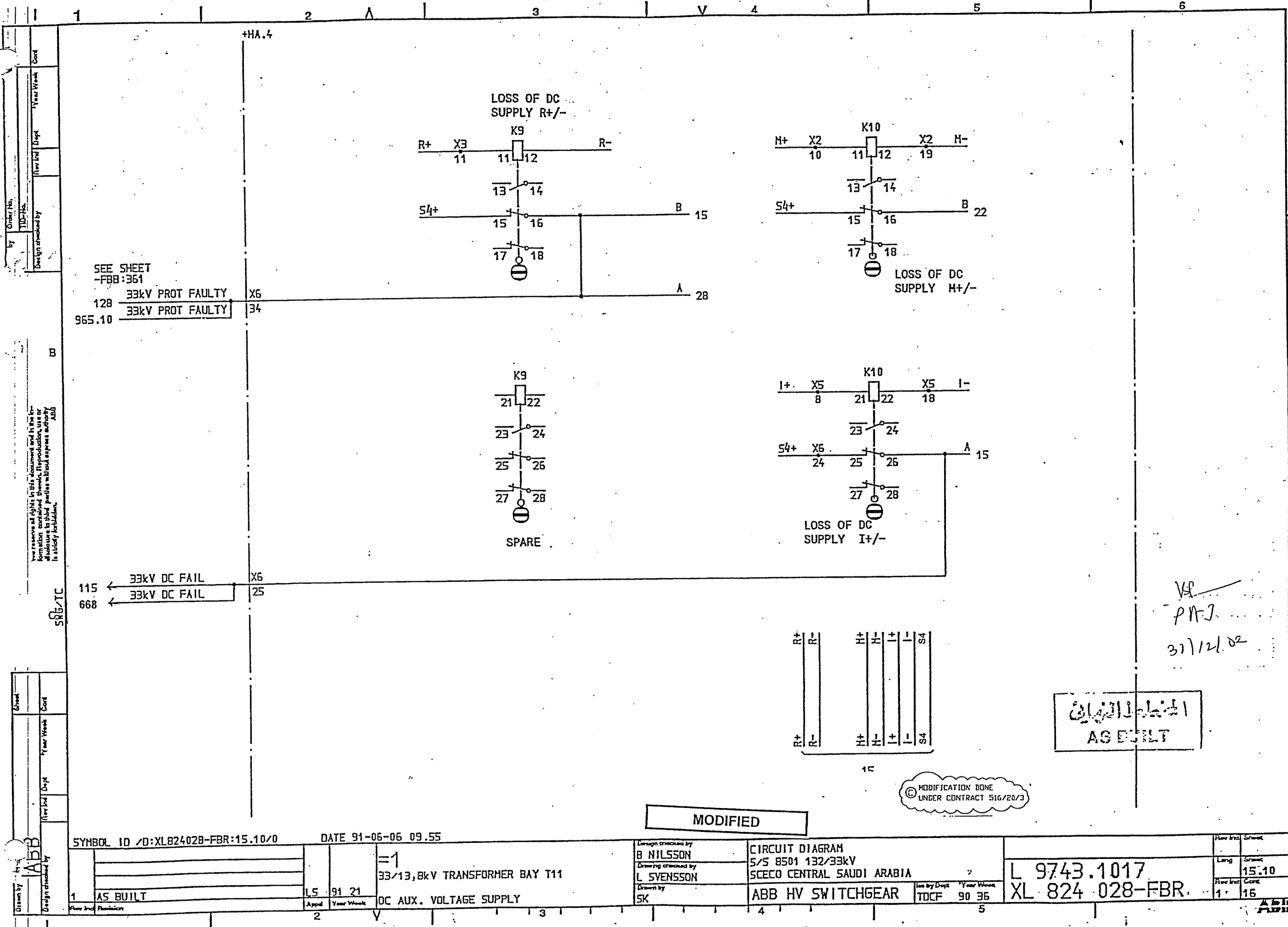
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S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

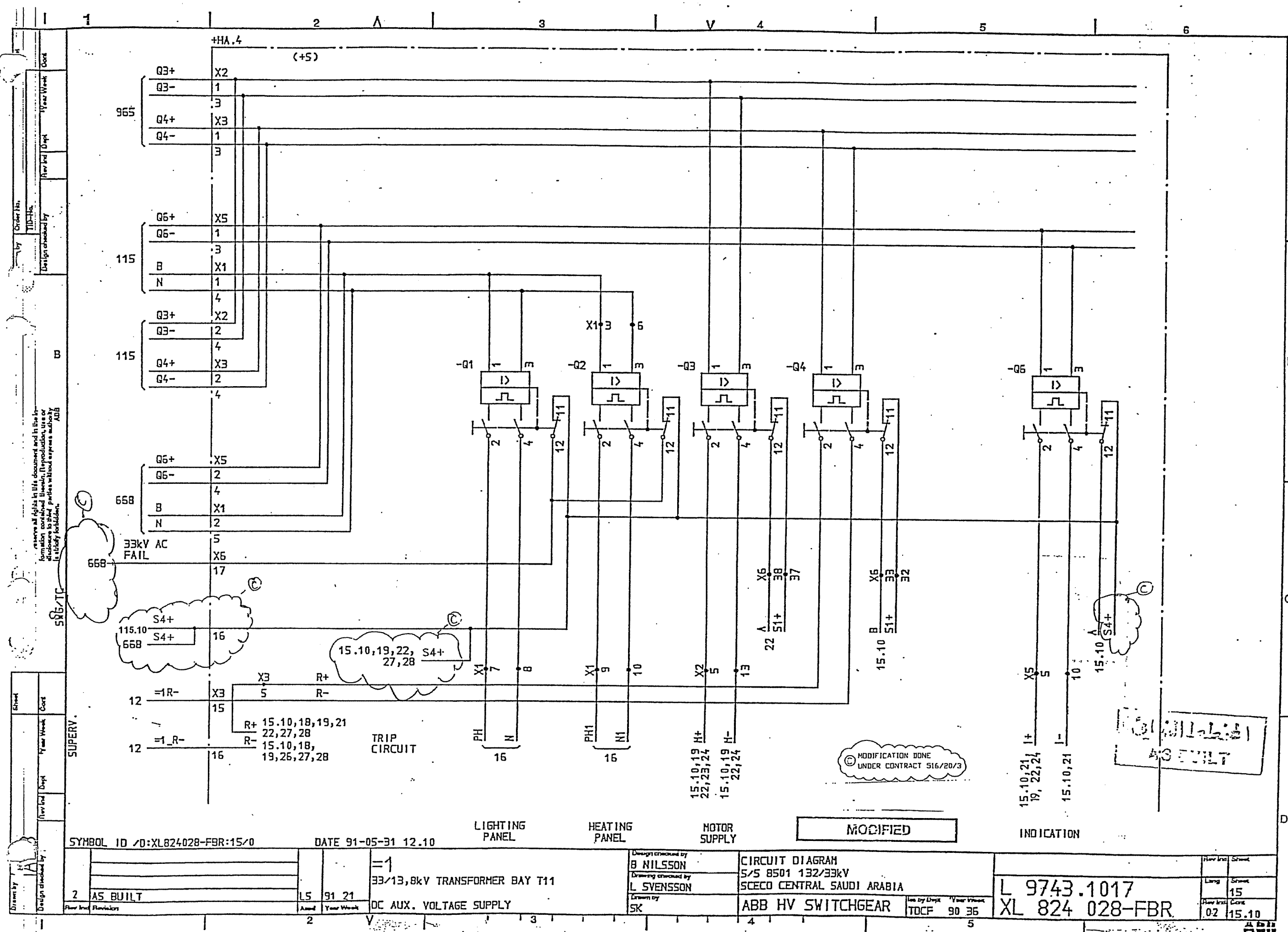
Iss by Dept
TCF
Year Week
90 10

L 9743.1017
XL 824 028-FBR

Rev	Ind	Sheet
1	12	15

ASEULT





SYMBOL ID /0:XL824028-FBR:15/0

DATE 91-05-31 12.10

LIGHTING PANEL

HEATING PANEL

MOTOR SUPPLY

MODIFIED

INDICATION

2	AS BUILT	15	91 21
Flow	Revisions	Amend	Year Week

=1
33/13,8kV TRANSFORMER BAY T11
DC AUX. VOLTAGE SUPPLY

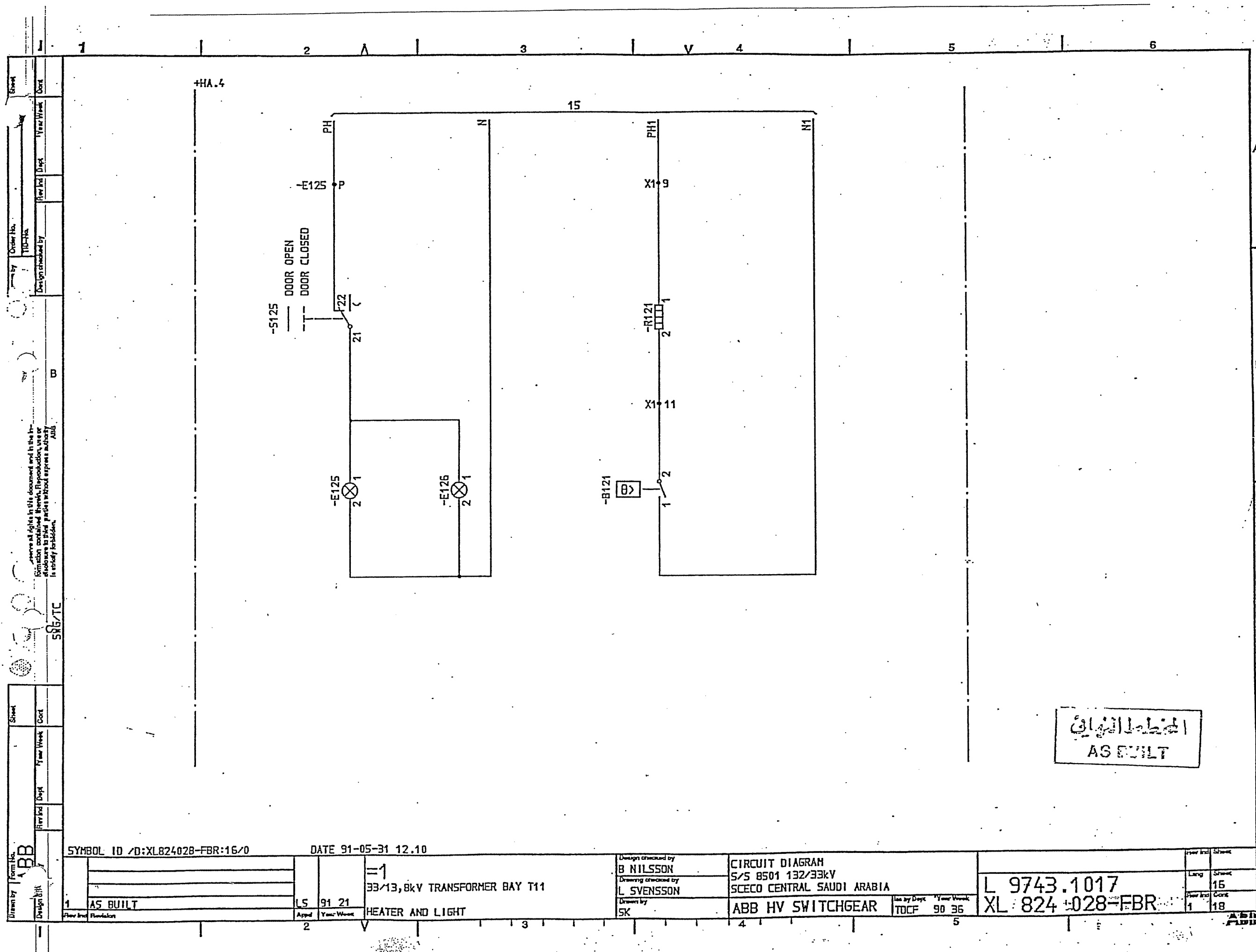
Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

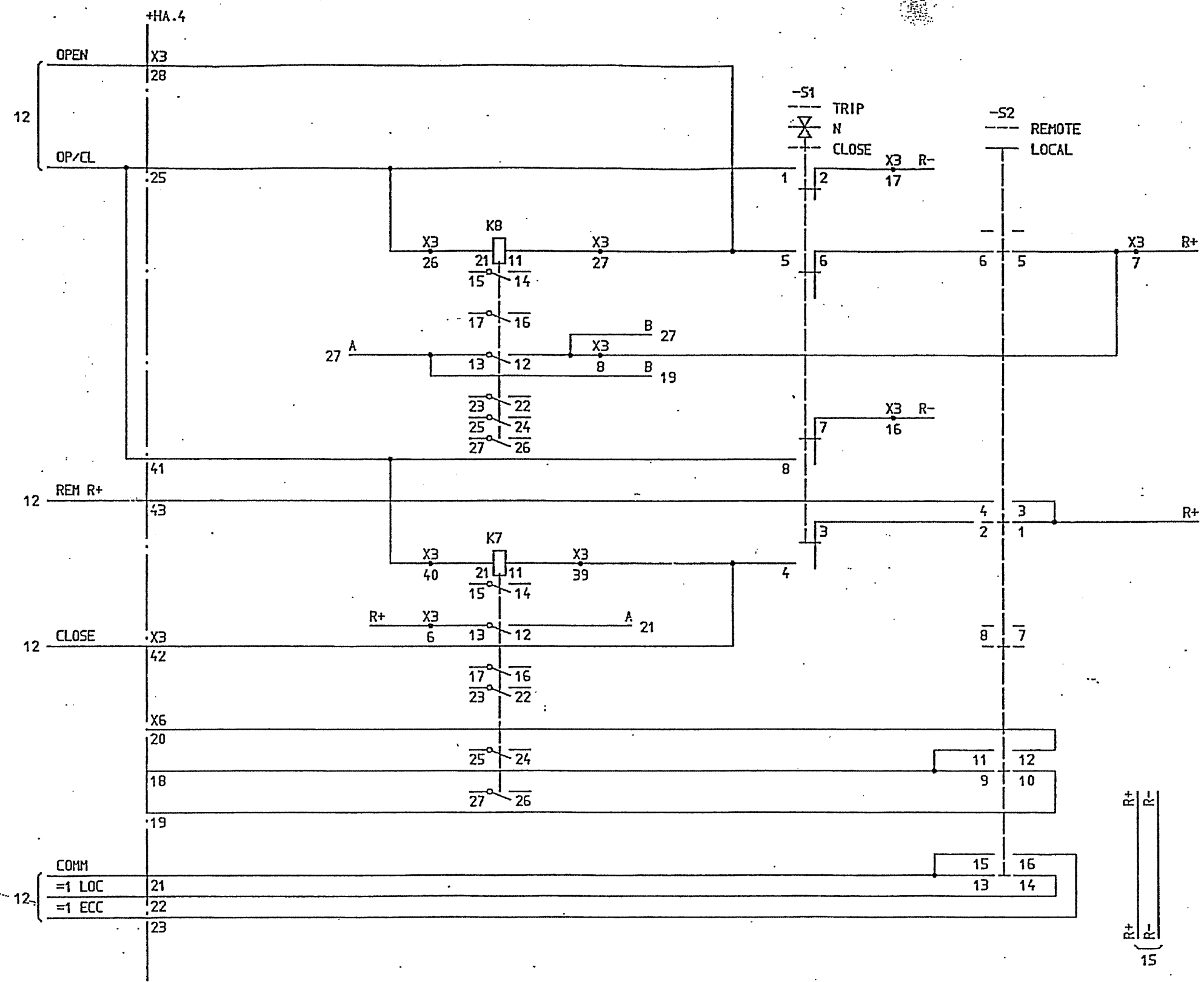
Iss by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824 028-FBR

Flow	Revisions	Amend	Year Week
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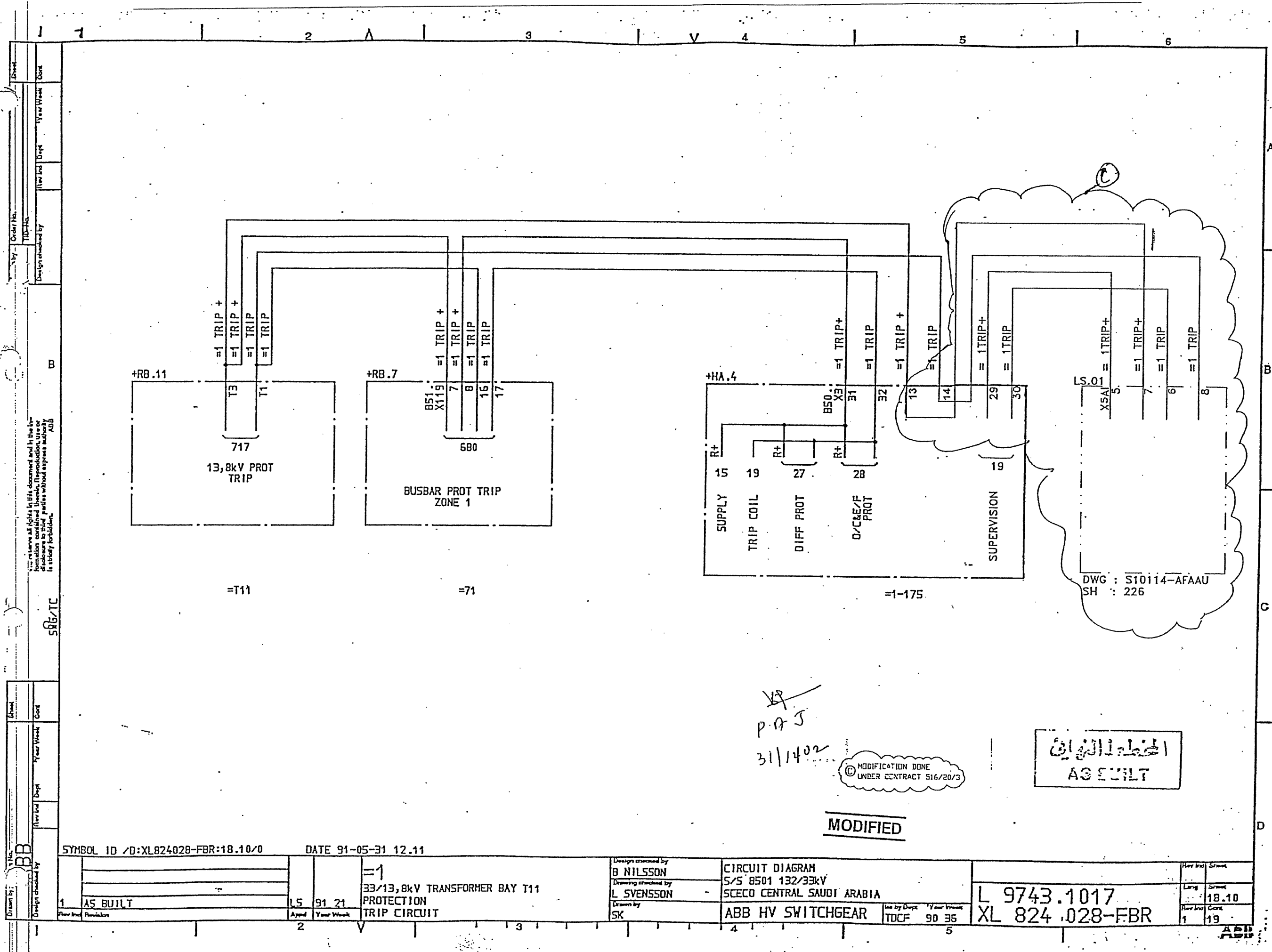


Sheet	18	Cont	18.10
Year Week	90	36	
Rev Ind	2	Year Week	90 36
Drawn by	ABB	Design checked by	SK
Order No.	TID-HA	Rev Ind	2
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SYBOL ID /D:XL824028-FBR:18/0			
92-07-02 18.51			
CIRCUIT DIAGRAM			
S/S 8501 132/33kV			
SCECO CENTRAL SAUDI ARABIA			
ABB HV SWITCHGEAR			
TDCF 90 36			
L 9743.1017			
XL 824 028-FBR			
AL ADD PLANT			



الخط الكهربائي
ASEULT

A
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D



Drawn by	Design checked by	Order No.	Year Week	Cont
BB	TJD-HA			
Drawn by	Design checked by	Order No.	Year Week	Cont
BB	TJD-HA			

SYMBOL ID /D:XL824028-FBR:18.10/0

DATE 91-05-31 12.11

1	AS BUILT	LS	91 21	33/13,8kV TRANSFORMER BAY T11 PROTECTION TRIP CIRCUIT
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Design checked by	B NILSSON
Drawing checked by	L SVENSSON
Drawn by	SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Use by Dept Year Week
TDCF 90 36

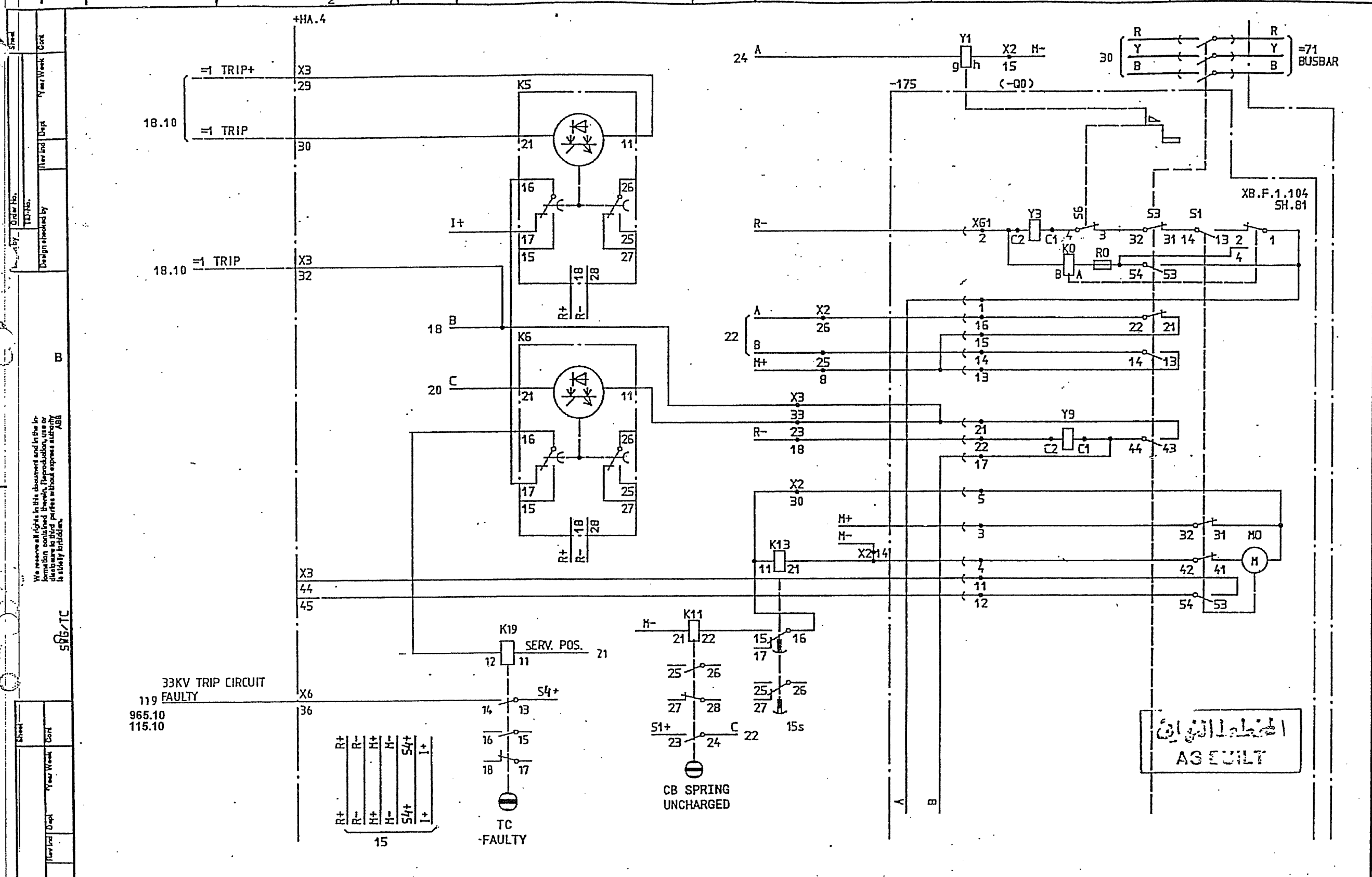
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XL 824 028-FBR

Year Week	Cont
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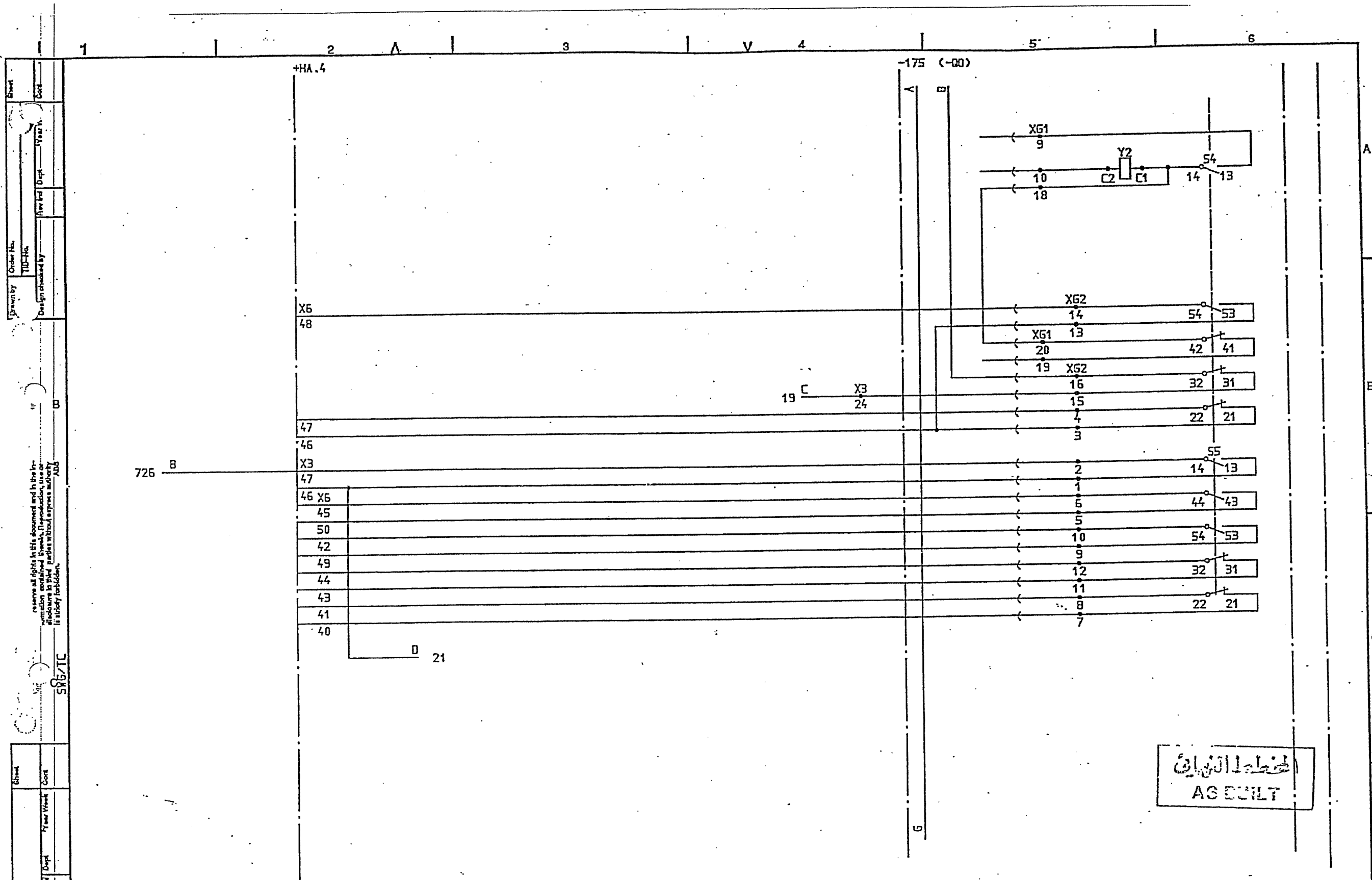
MODIFIED

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UNDER CONTRACT 516/20/3

المخططات الكهربائية
AS BUILT

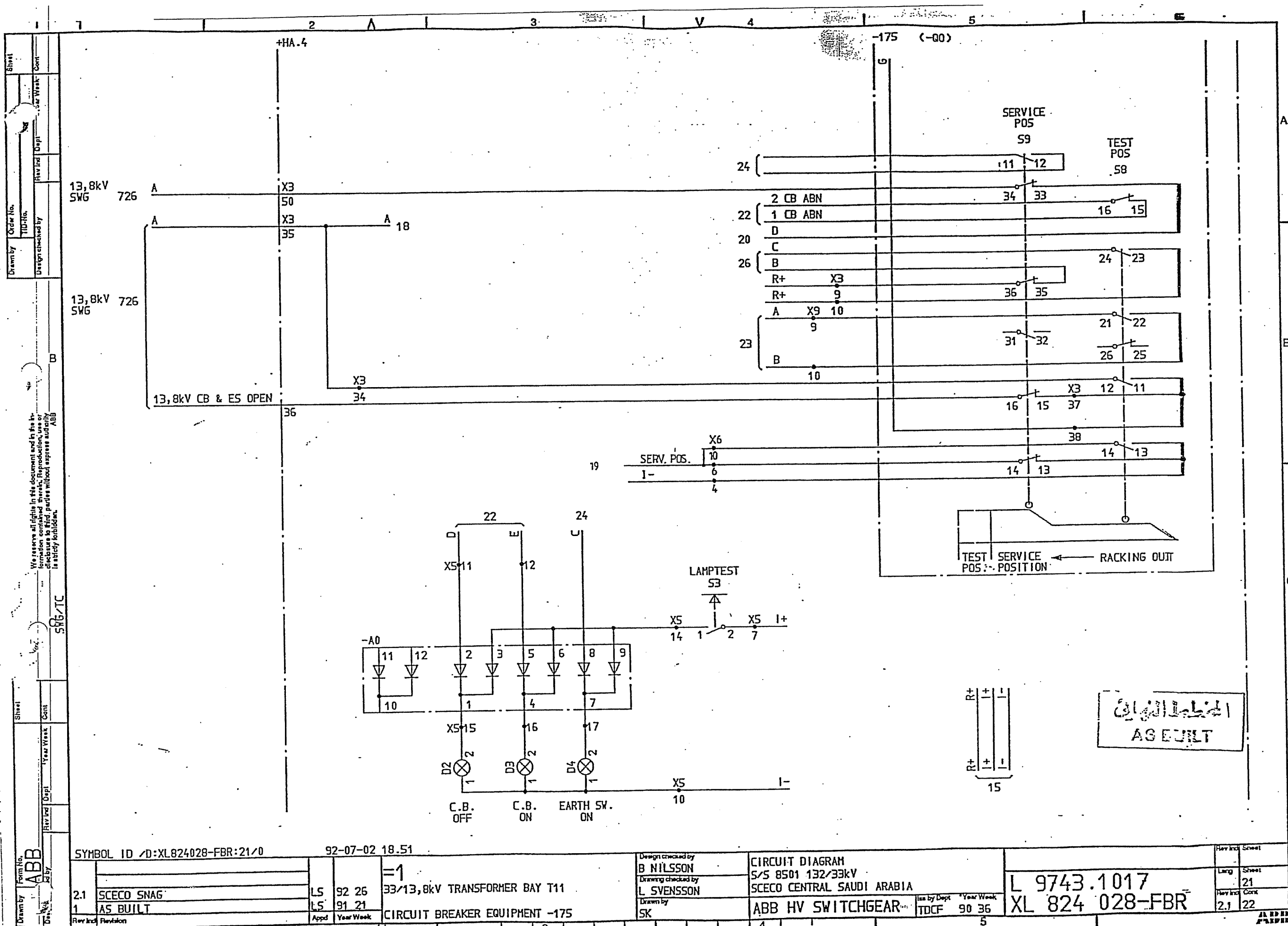


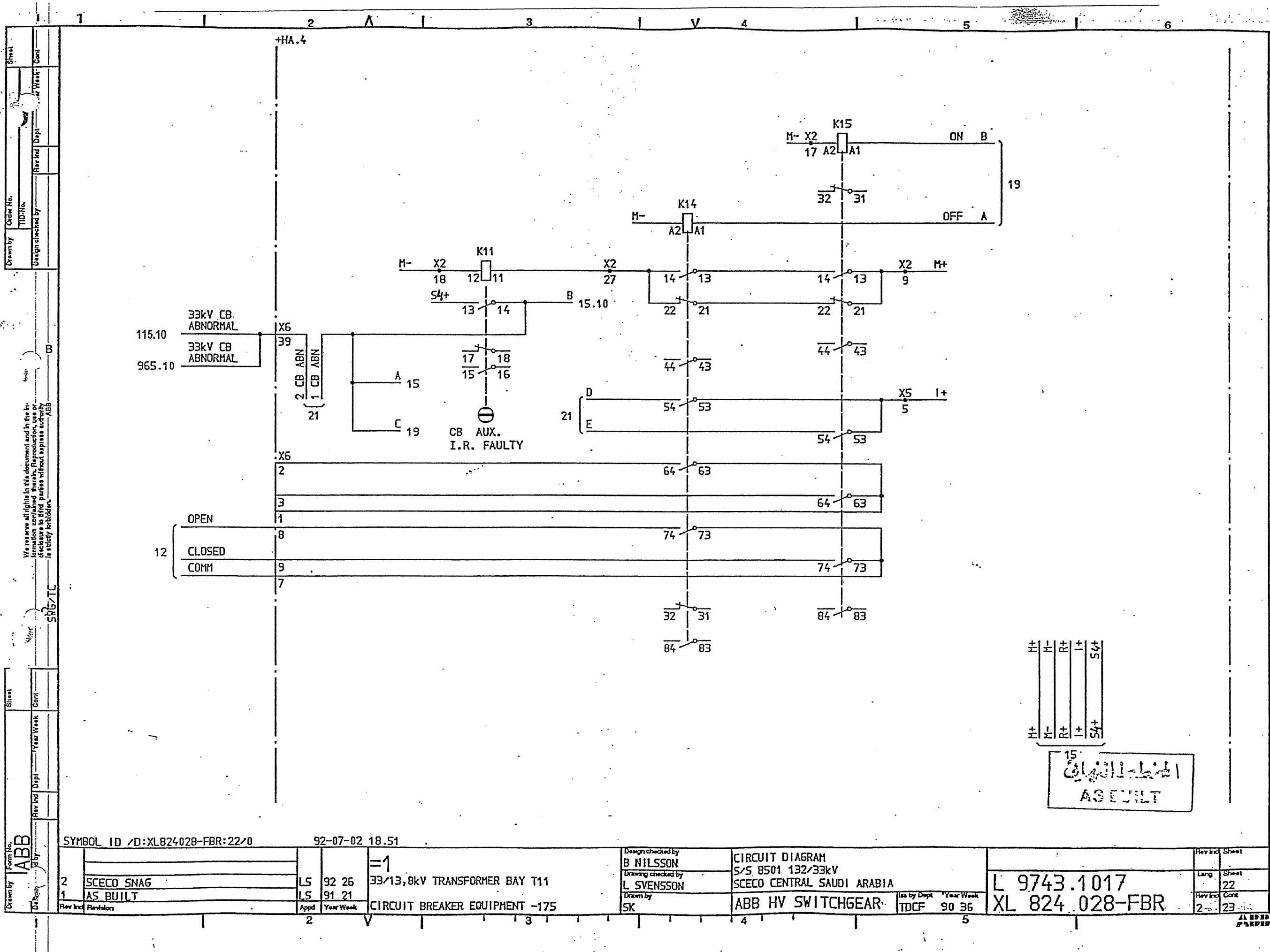
SYMBOL ID 10:XL824028-FBR:19/0 92-09-09 07.32		Design checked by B NILSSON Drawing checked by L SVENSSON Drawn by SK		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA ABB HV SWITCHGEAR		L 9743.1017 XL 824 028-FBR	
2.1 1	SCECO SNAG AS BUILT	LS LS	92 26 91 21	=1 33/13,8kV TRANSFORMER BAY T11 CIRCUIT BREAKER EQUIPMENT -175	TDCF 90 36	2.1	19 20

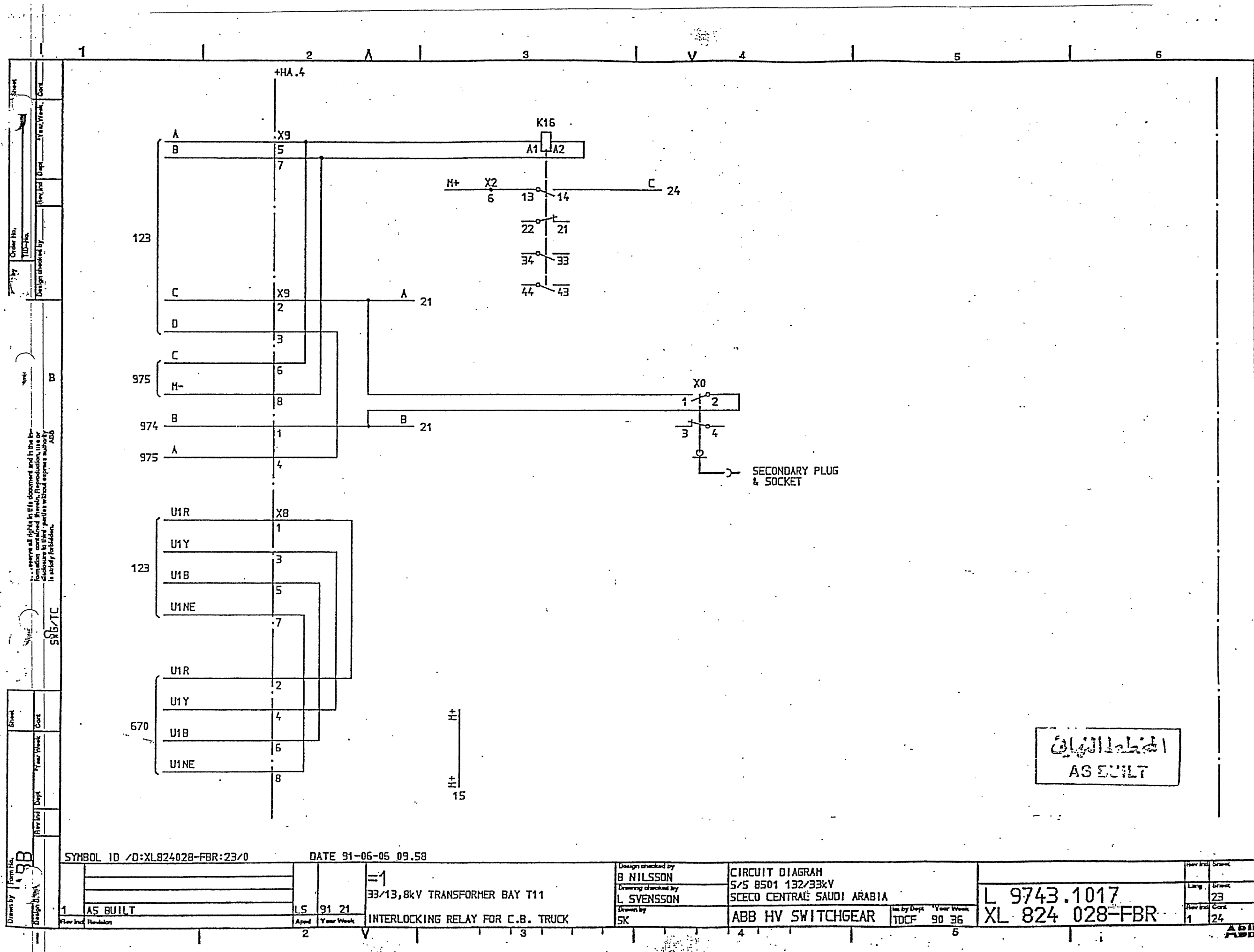


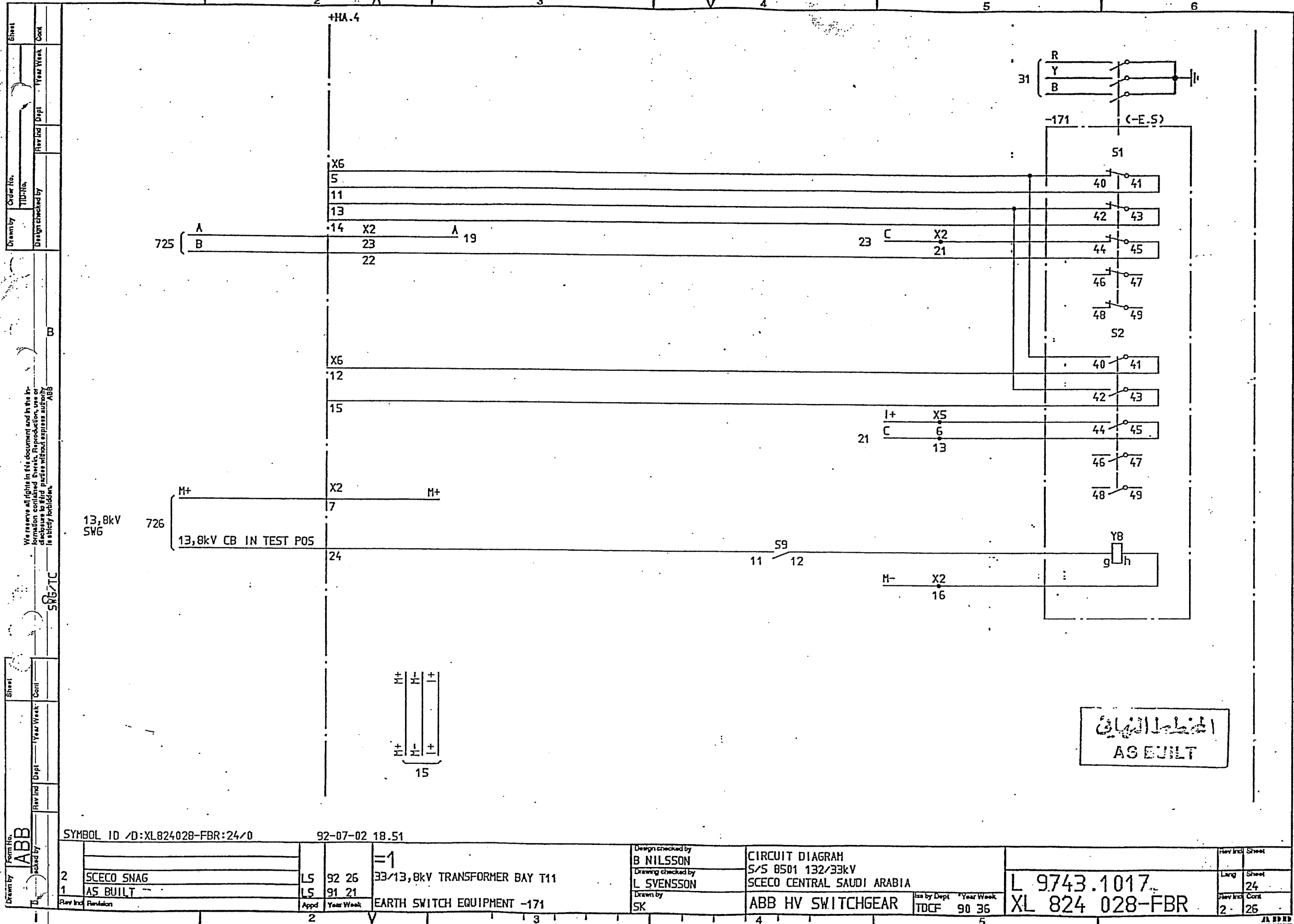
الخطة الكهربائية
AS BUILT

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Drawing checked by L SVENSSON		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		Lang Sheet	
Drawing by SK		ABB HV SWITCHGEAR		TDCF 90 36		XL 824 028-FBR		Rev Incl Sheet	
1 AS BUILT		15 91 21		CIRCUIT BREAKER EQUIPMENT -175				20	
2								21	









SYMBOL ID /D:XL824028-FBR:24/0

92-07-02 18.51

2	SCECO SNAG	LS	92 26	33/13,8kV TRANSFORMER BAY T11
1	AS BUILT	LS	91 21	
Rev	Inc	Revision	Appd	Year Week
2	V			

EARTH SWITCH EQUIPMENT -171

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

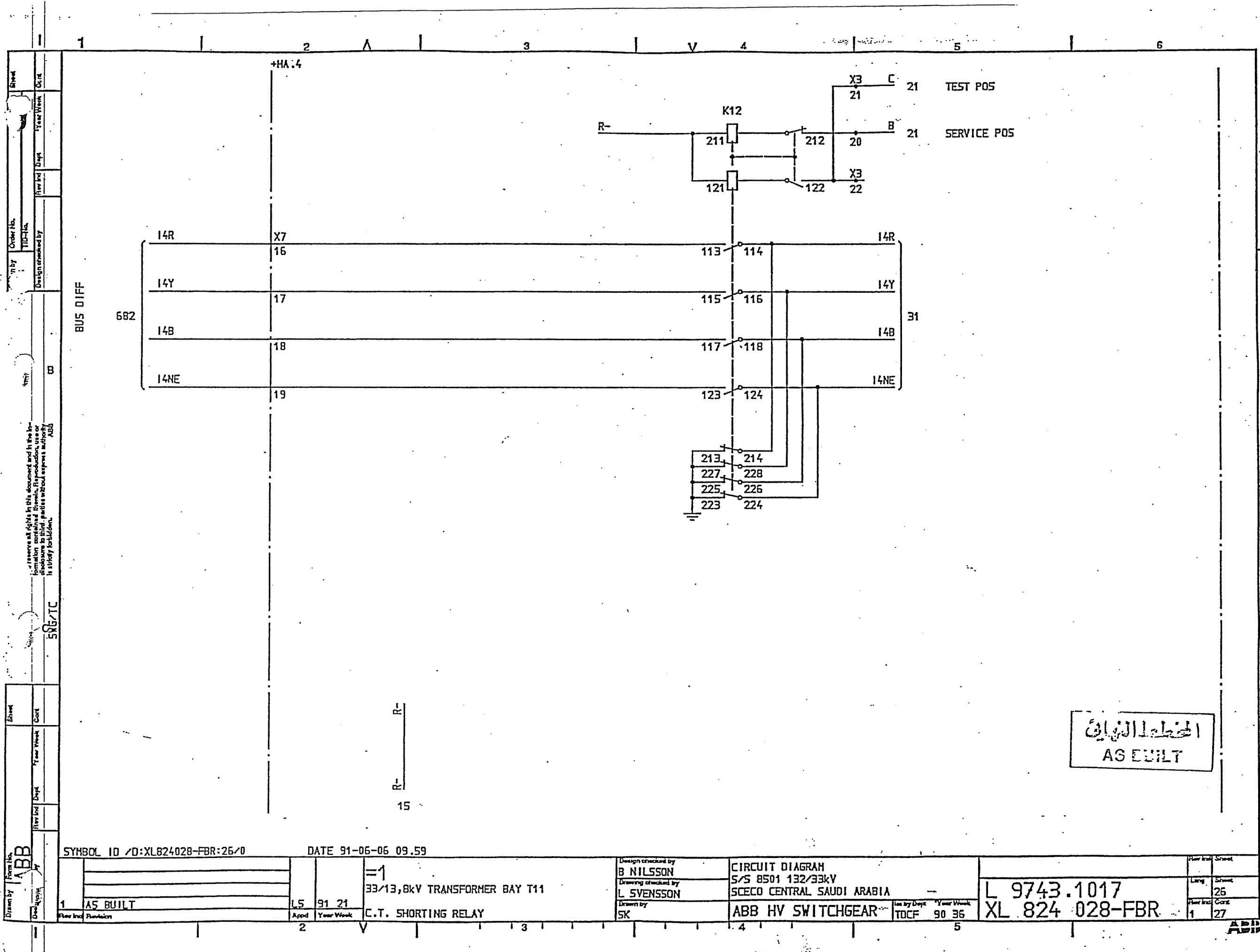
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept Year Week
TDCF 90 36

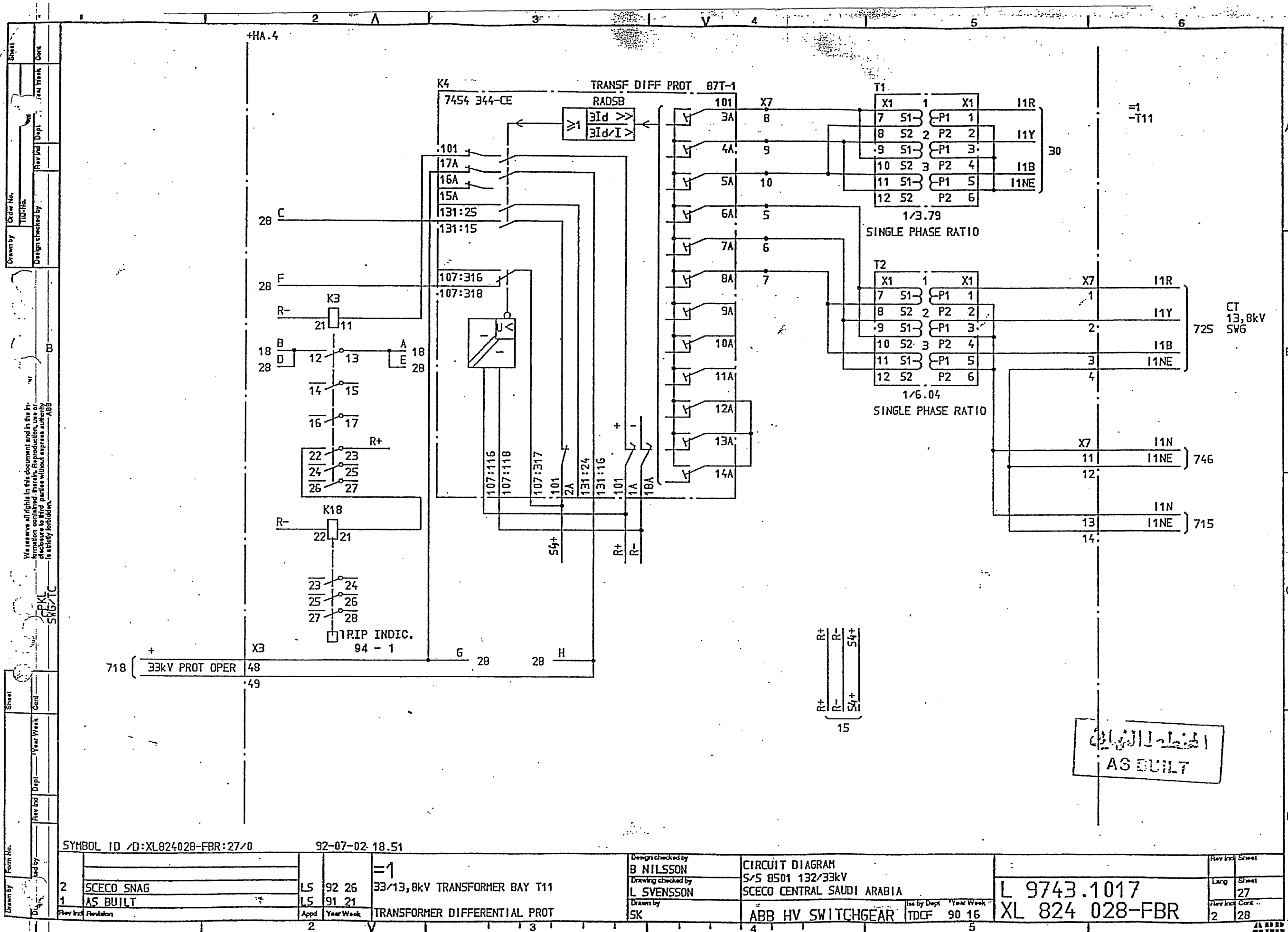
L 9743.1017
XL 824 028-FBR

Rev	Inc	Sheet
2	24	26

AS BUILT



المخطط الكهربائي
AS BUILT



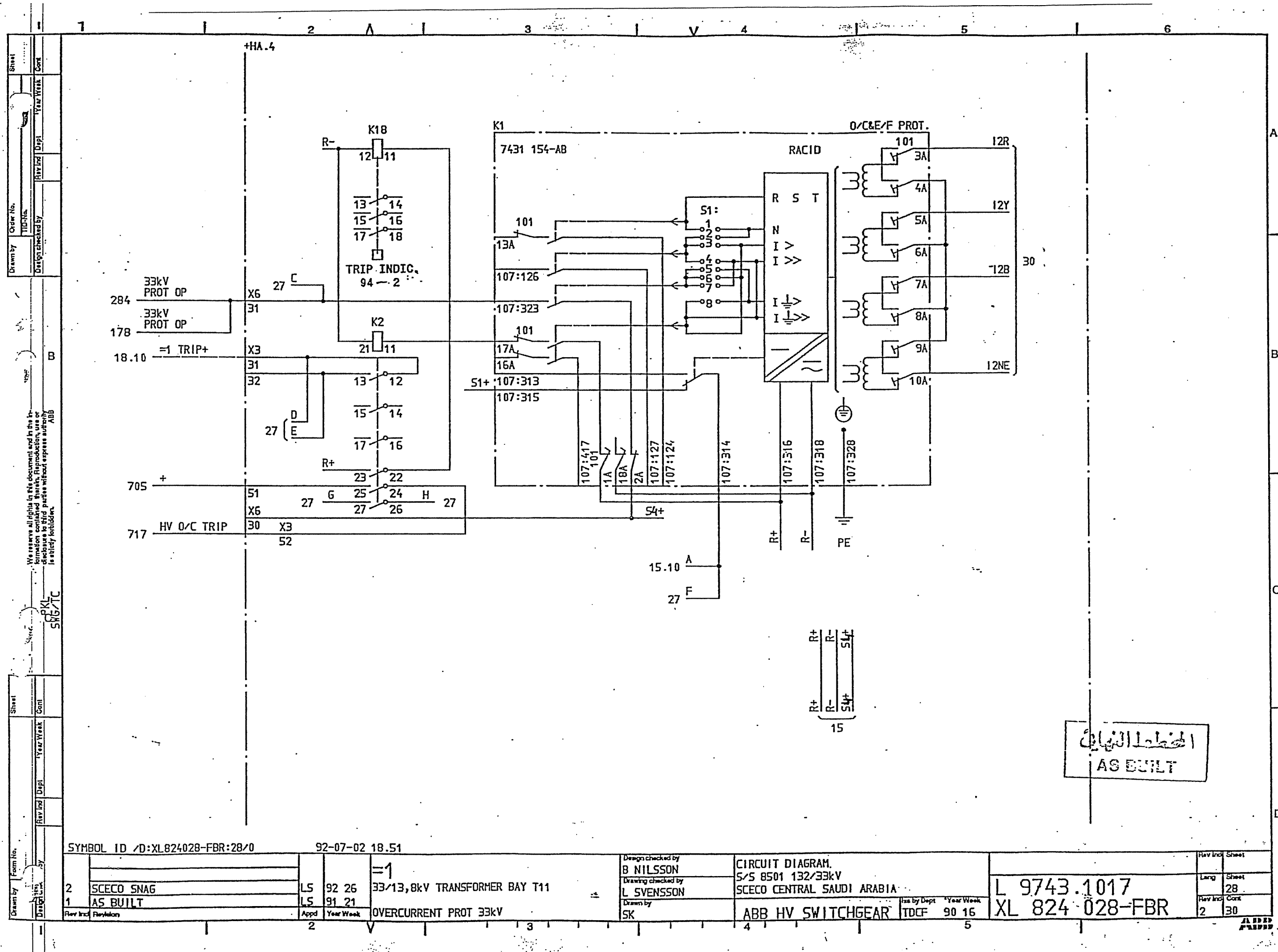
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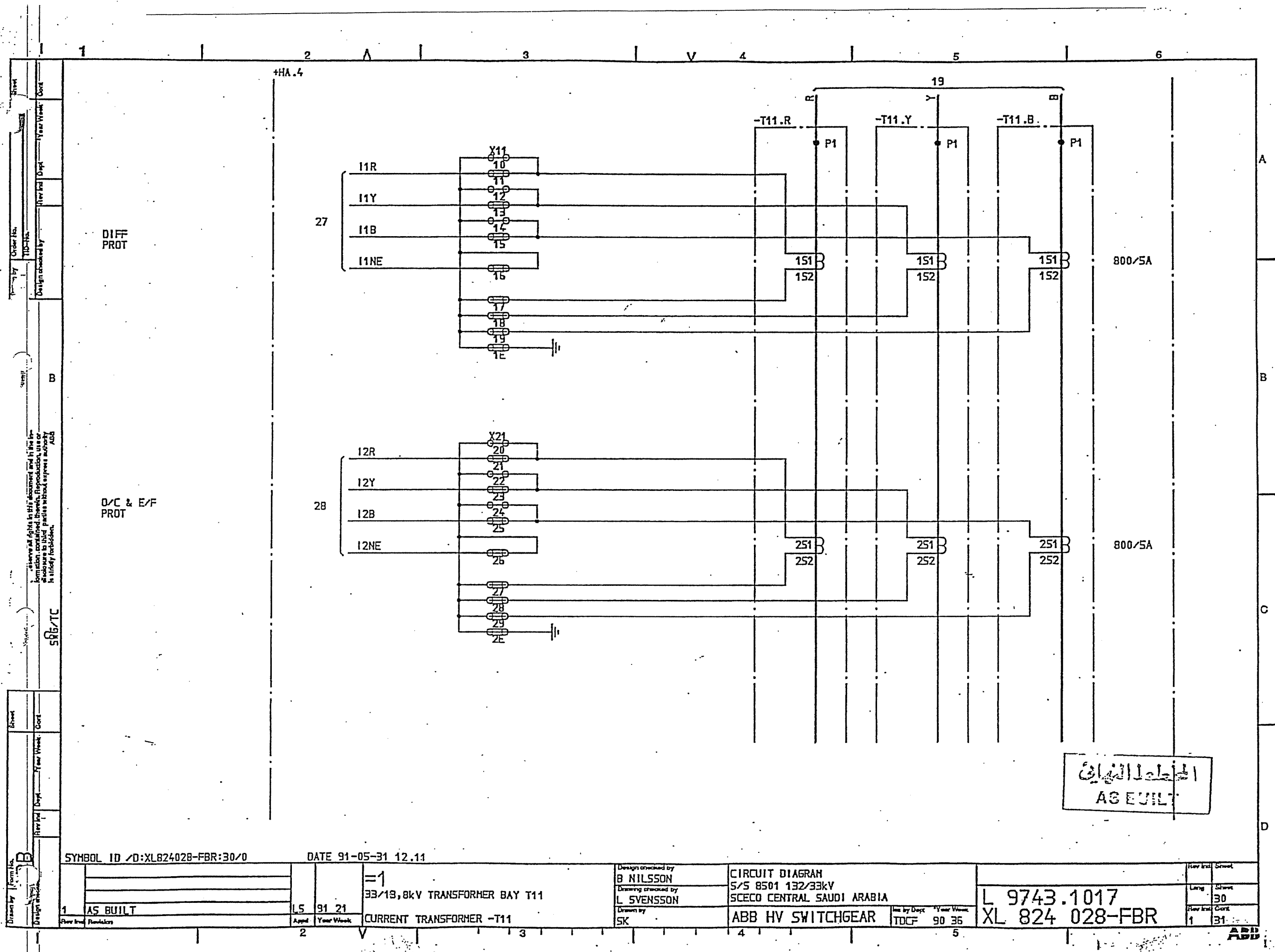
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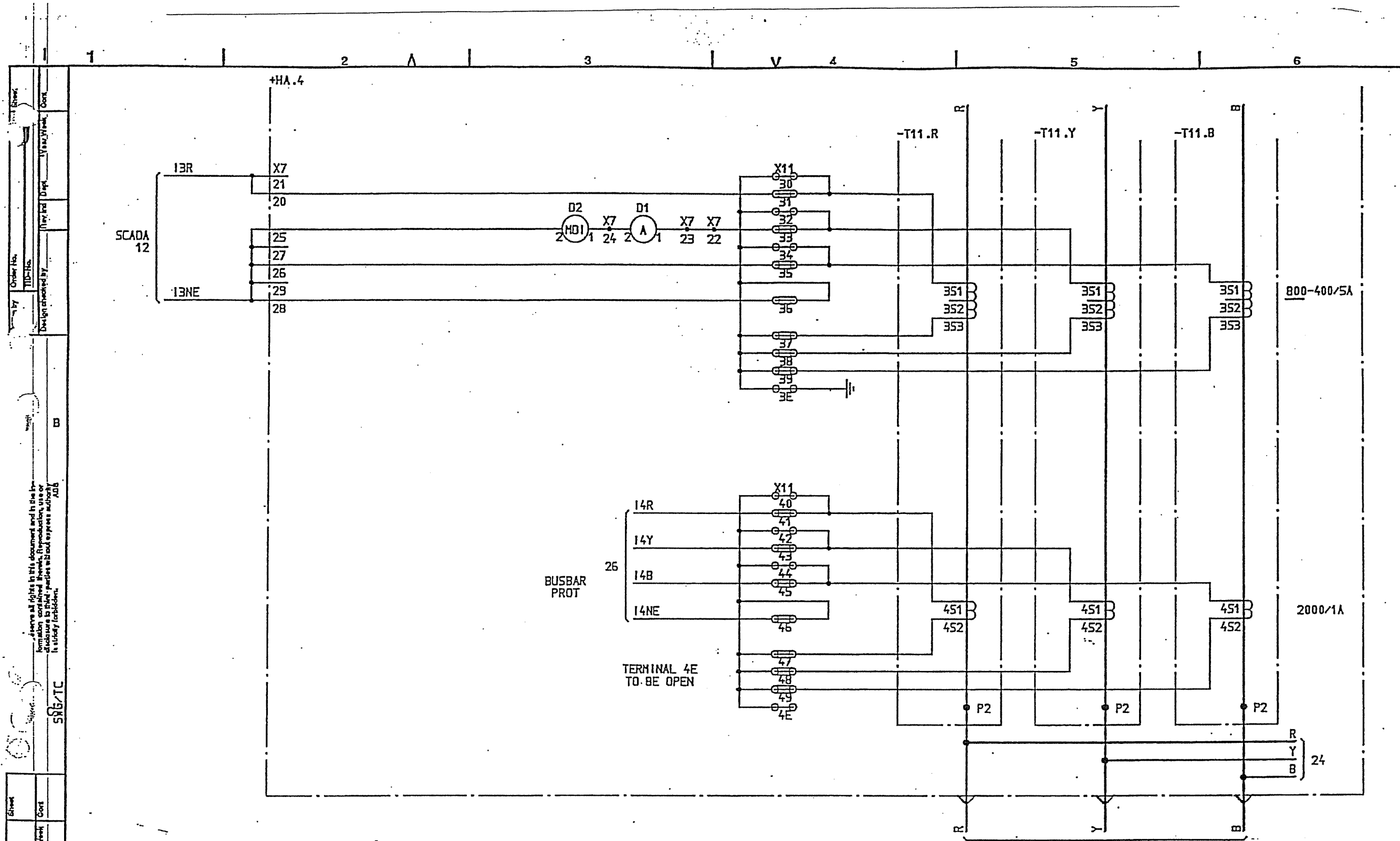
92-07-02-18.51

2	SCECO SNAG	LS	92 26	33/13,8kV TRANSFORMER BAY T11	Design checked by B NILSSON	CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA	Rev. Ind. Sheet
1	AS BUILT	LS	91 21	TRANSFORMER DIFFERENTIAL PROT	Drawing checked by L SVENSSON	ABB HV SWITCHGEAR	Lang Sheet 27
Rev. Ind. Revision	Appd	Year Week			Drawn by SK	Iss. by Dept Year Week TDCF 90 16	Rev. Ind. Cont. 2 28

ALBID
FABR







33/13, 8kV TRANSFORMER T11
=T11.

الخطة الكهربائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:31/0

DATE 91-05-31 12:11

1	AS BUILT	15	91 21
Rev	Int	Rev	Int

33/13, 8kV TRANSFORMER BAY T11
CURRENT TRANSFORMER -T11

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

1m by Dayr Year Week
TDCF 90 35

L 9743:1017
XL 824 028-FBR

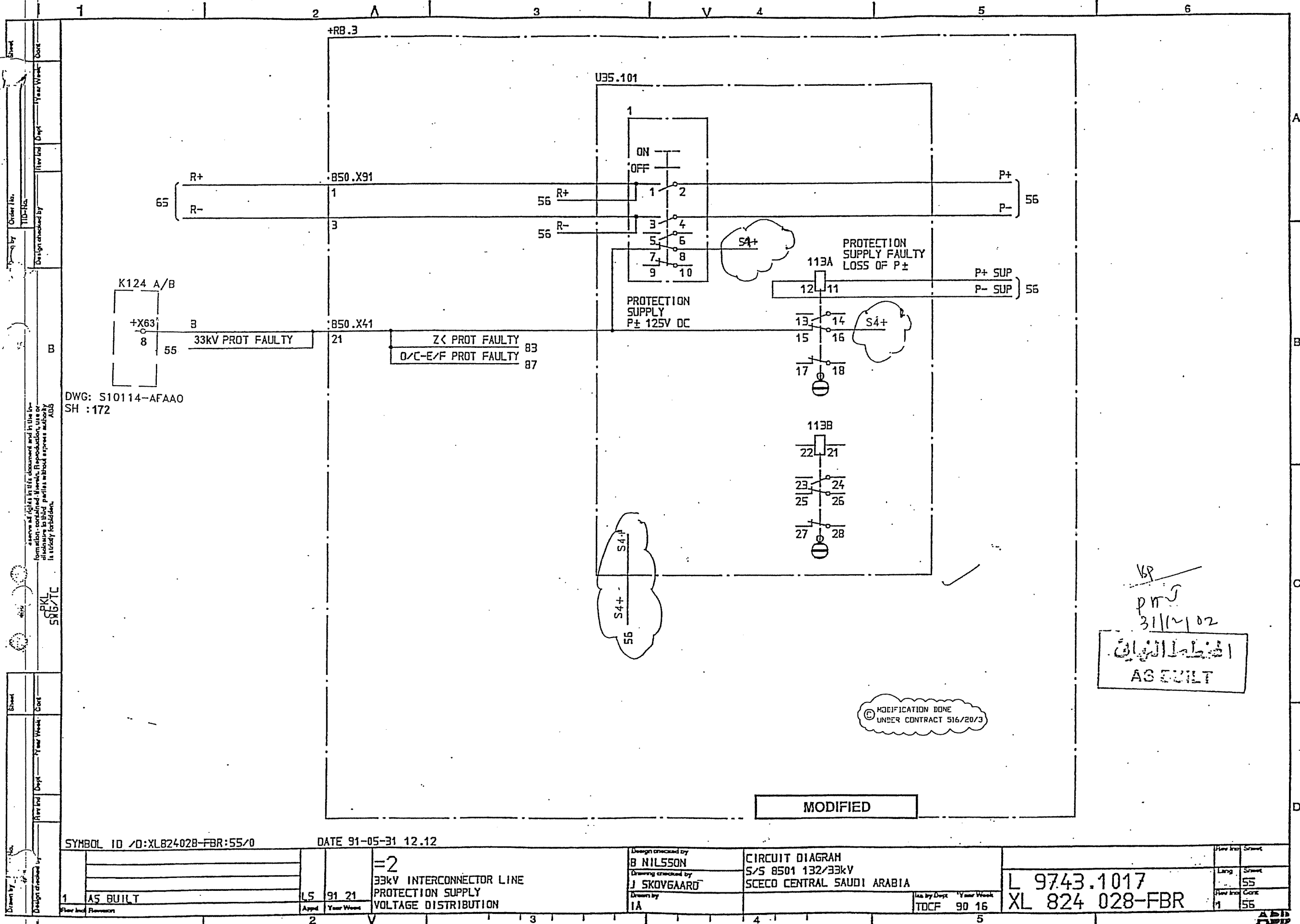
Rev	Int	Rev	Int
1	51	31	51

ABB

ITEM	DESIGNATION	SHEET
+RB.3	HEATING AND LIGHTING RELAY CUBICLE	54
	VOLTAGE DISTRIBUTION RELAY CUBICLE	55
+XA.1	SCADA INTERFACE EQUIPMENT	62
+HA.7	AUX. VOLTAGE SUPPLY	65
	HEATING AND LIGHTING	66
	C.B. OPERATION CIRCUITS	68
-275	CIRCUIT BREAKER EQUIPMENT	69
	INTERLOCKING	73
-271	EARTH SWITCH EQUIPMENT	74
	TRIP RELAYS	78
-T11	CURRENT TRANSFORMER	80
+RB.3	DISTANCE PROTECTION	82
	AUTO RECLOSE RELAY	85
	OVERCURRENT AND EARTH FAULT PROT.	87

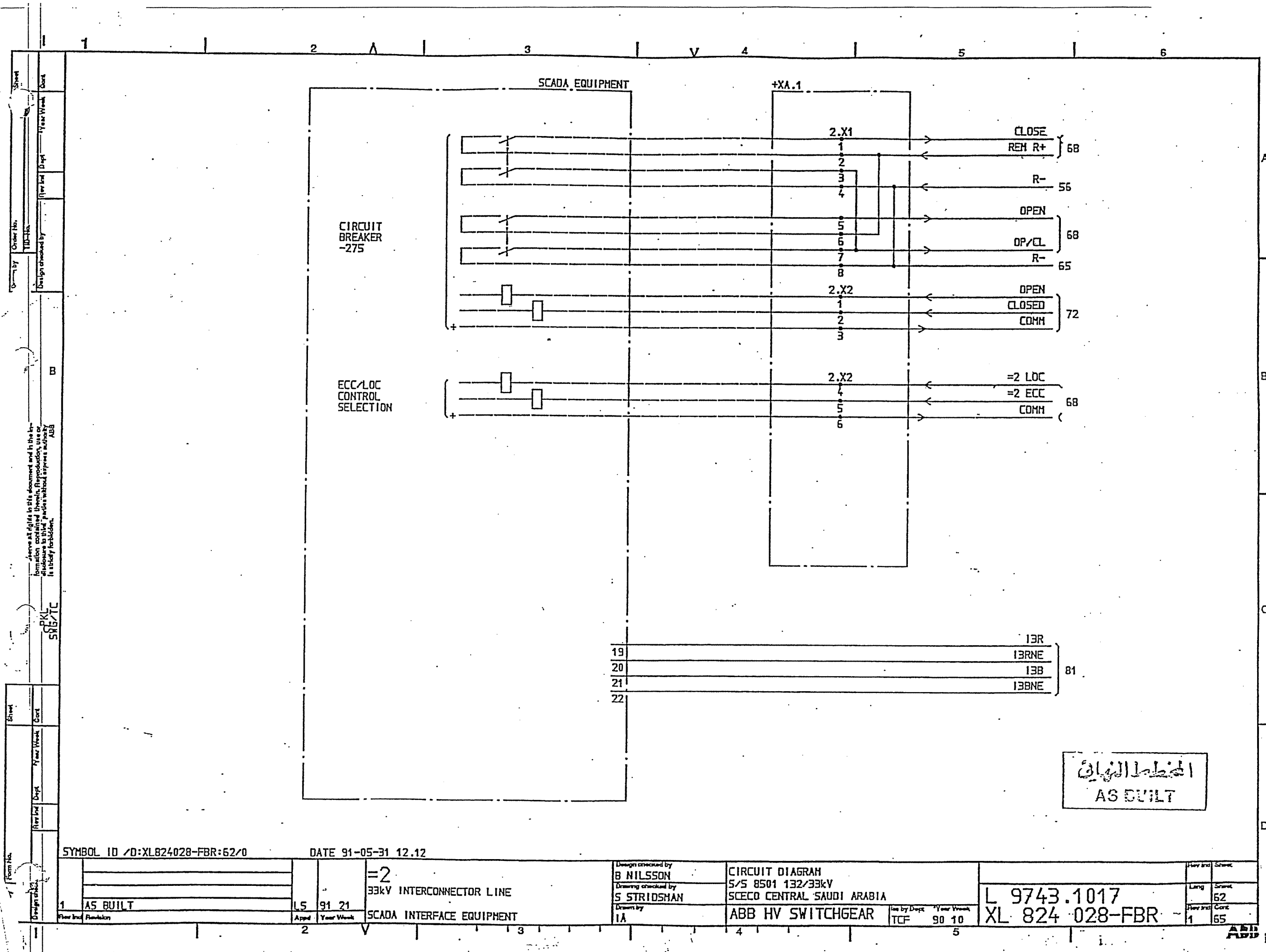
المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:51/0		DATE 91-05-31 12.11		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev Int. Sheet	
				Drawing checked by L SVENSSON		S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		Lang. Sheet	
1 AS BUILT		L5 91 21		=2 33kV INTERCONNECTION LINE LIST OF CONTENTS		Iss by Dept. Year Week TDCF 90 36		L 9743.1017 XL 824 028-FBR-	
Flow Int. Revision		Appd. Year Week		Drawn by SK				Rev Int. Cont.	
								1 54	



31/12/02
 AS BUILT

SYMBOL ID /0:XL824028-FBR:55/0		DATE 91-05-31 12.12		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		L 9743.1017	
AS BUILT		=2 33kV INTERCONNECTOR LINE PROTECTION SUPPLY VOLTAGE DISTRIBUTION		Drawing checked by J SKOVGAARD		SCECO CENTRAL SAUDI ARABIA		XL 824 028-FBR	
1		LS 91 21		IA		TDCF 90 16		55	
2		V		3		4		5	



SYMBOL ID /D:XL824028-FBR:62/0

DATE 91-05-31 12.12

1	AS BUILT	LS	91 21	SCADA INTERFACE EQUIPMENT
2				
3				

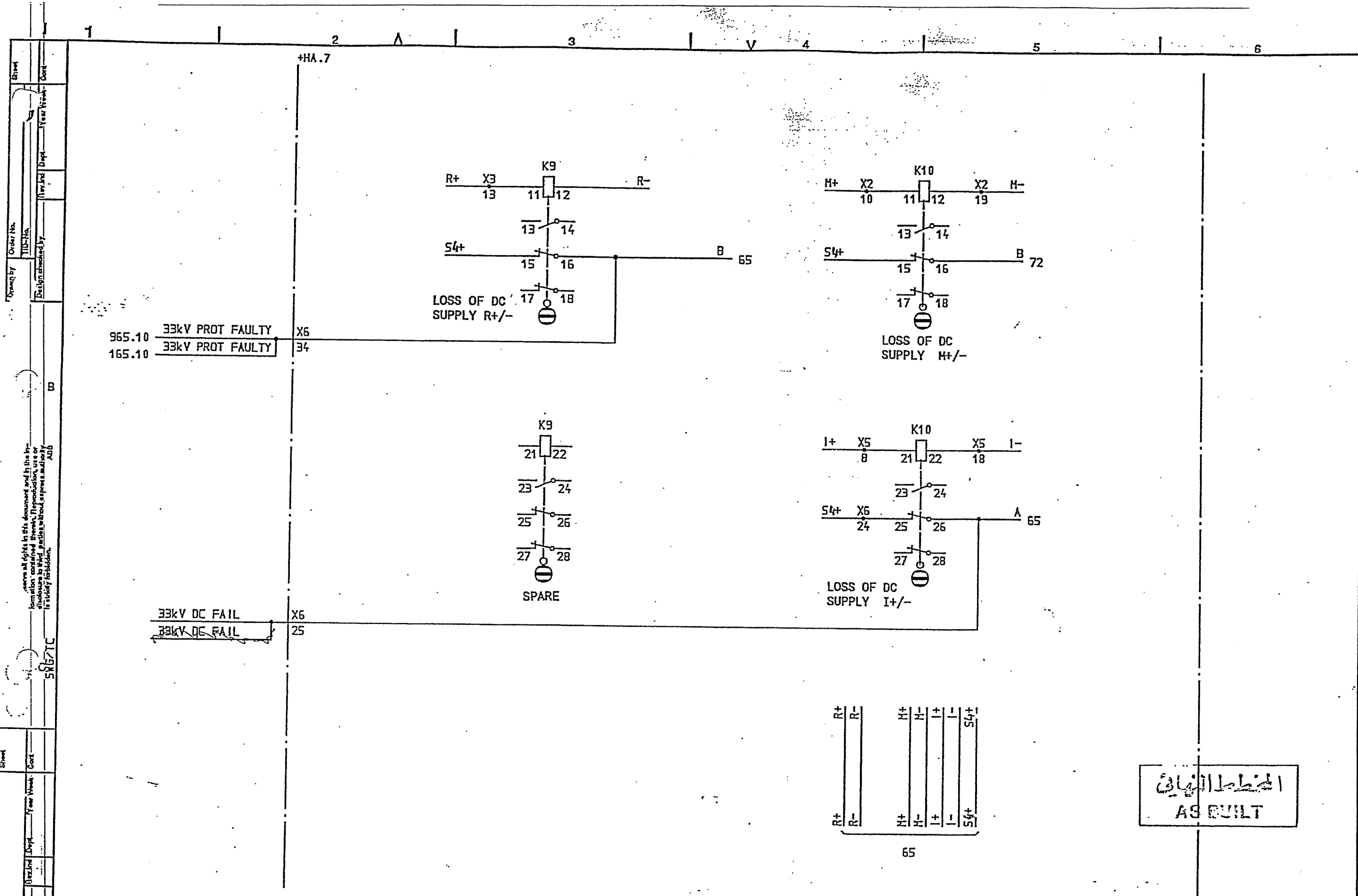
Design checked by
B NILSSON
Drawing checked by
S STRIDSHAN
Drawn by
IA

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

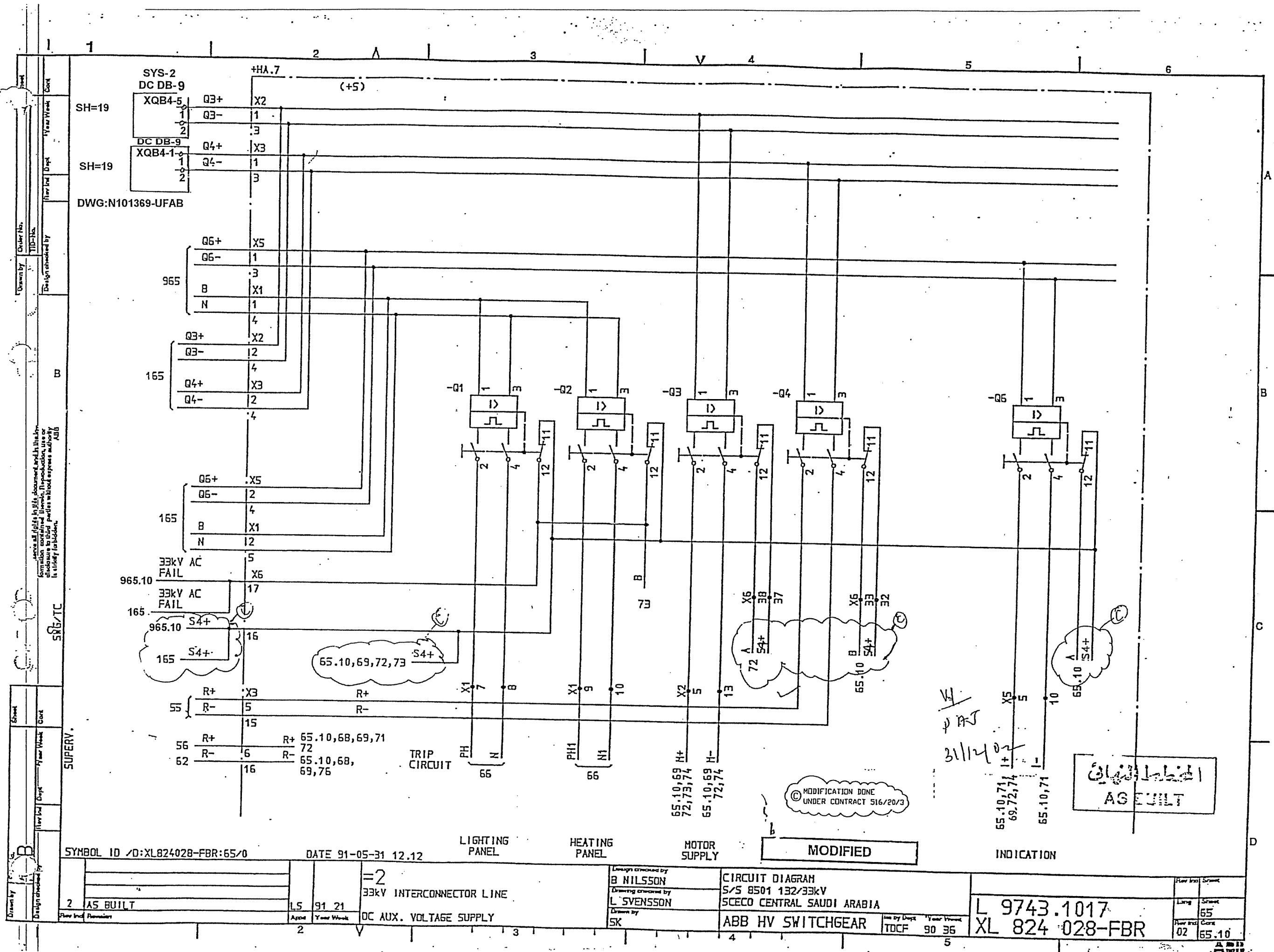
Iss by Dept Year Week
TCF 90 10

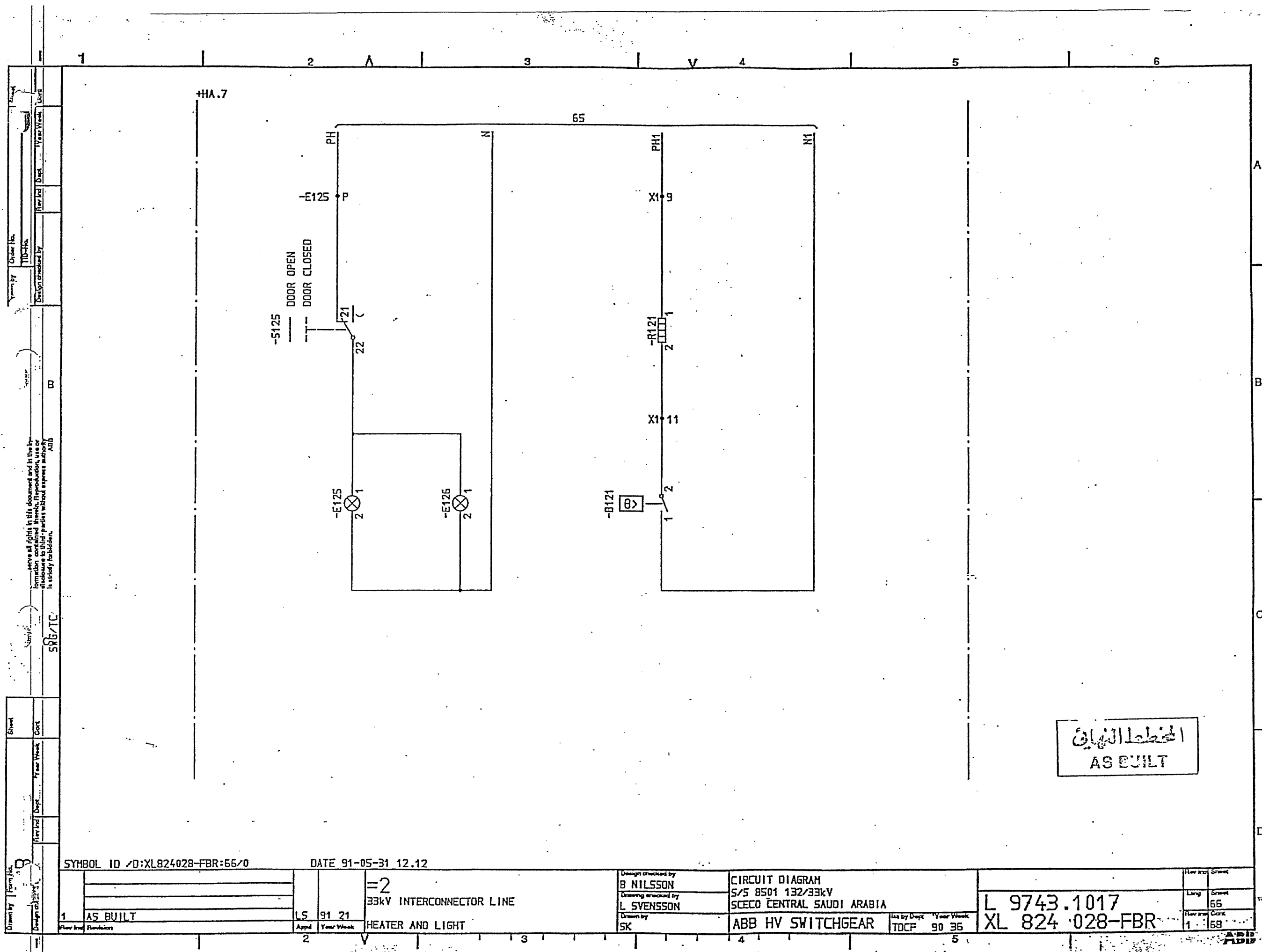
L 9743.1017
XL 824 028-FBR

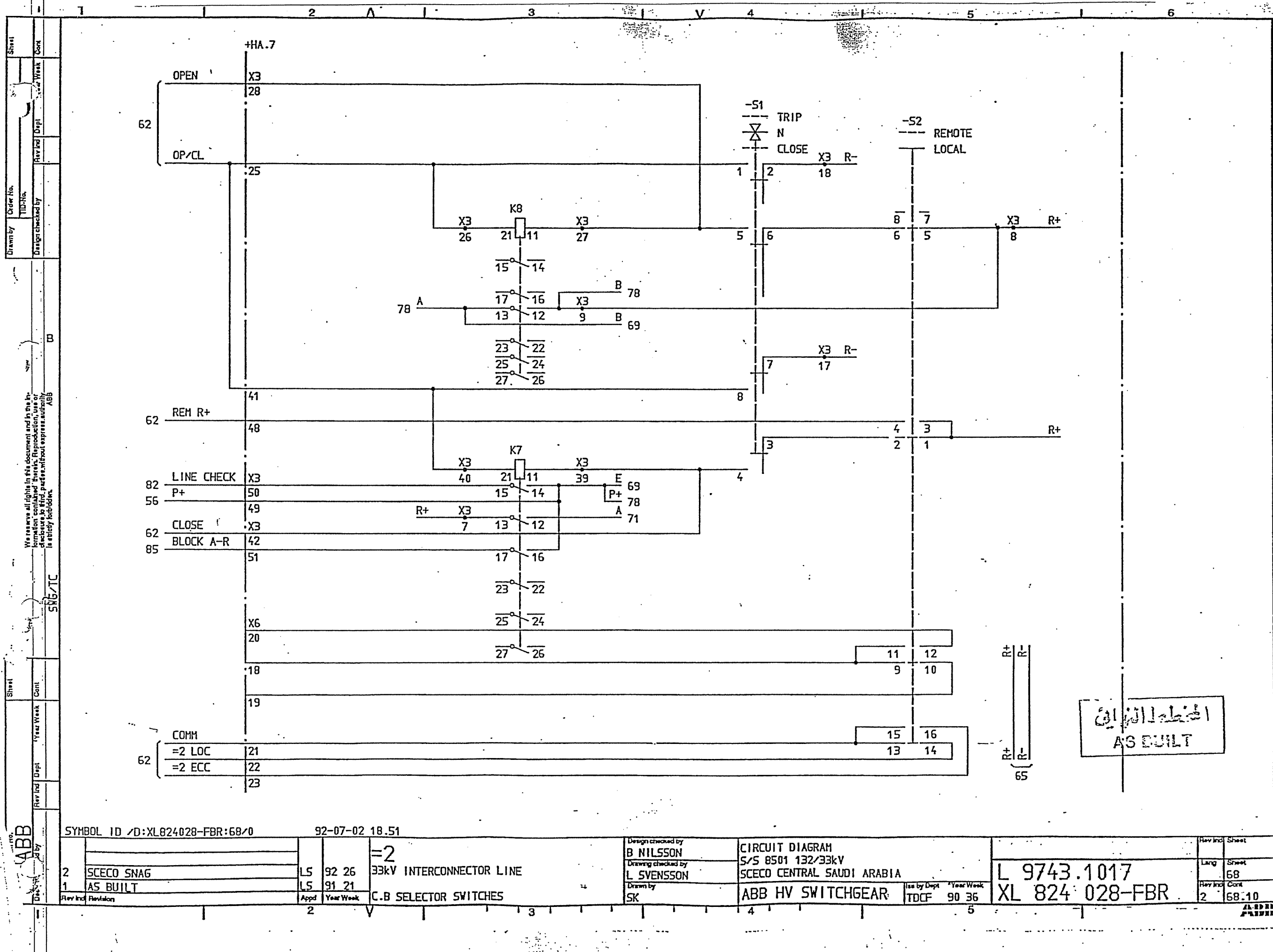
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Drawn by BB	Check by BB	Year Week 91 21	Year Week 91 21	DATE 91-05-31 12.12	SYMBOL ID /0:XL824028-FBR:65.10/0
AS BUILT			=2 33kV INTERCONNECTOR LINE		
DC AUX. VOLTAGE SUPPLY			CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		
ABB HV SWITCHGEAR			L 9743.1017 XL 824 028-FBR		

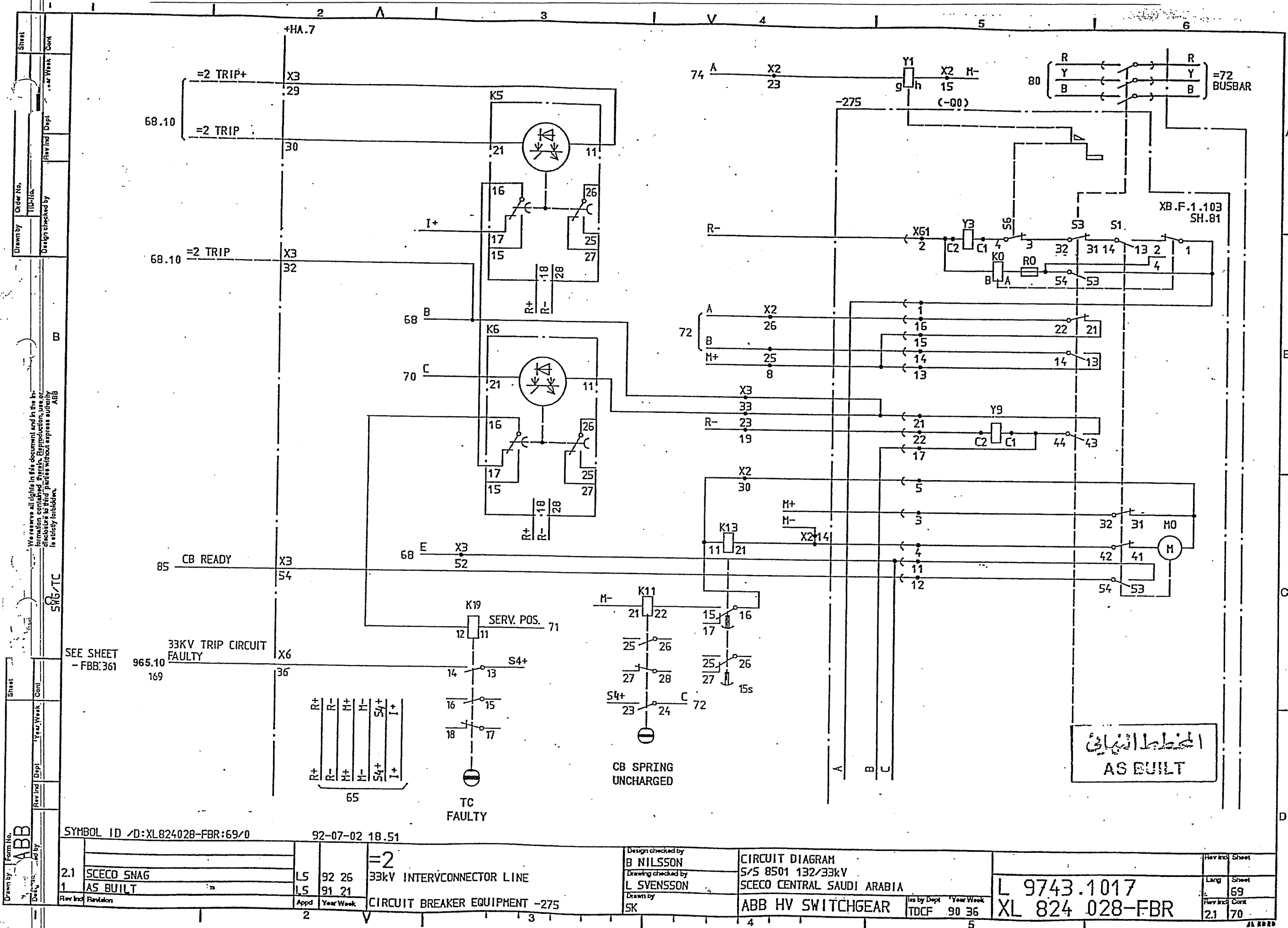


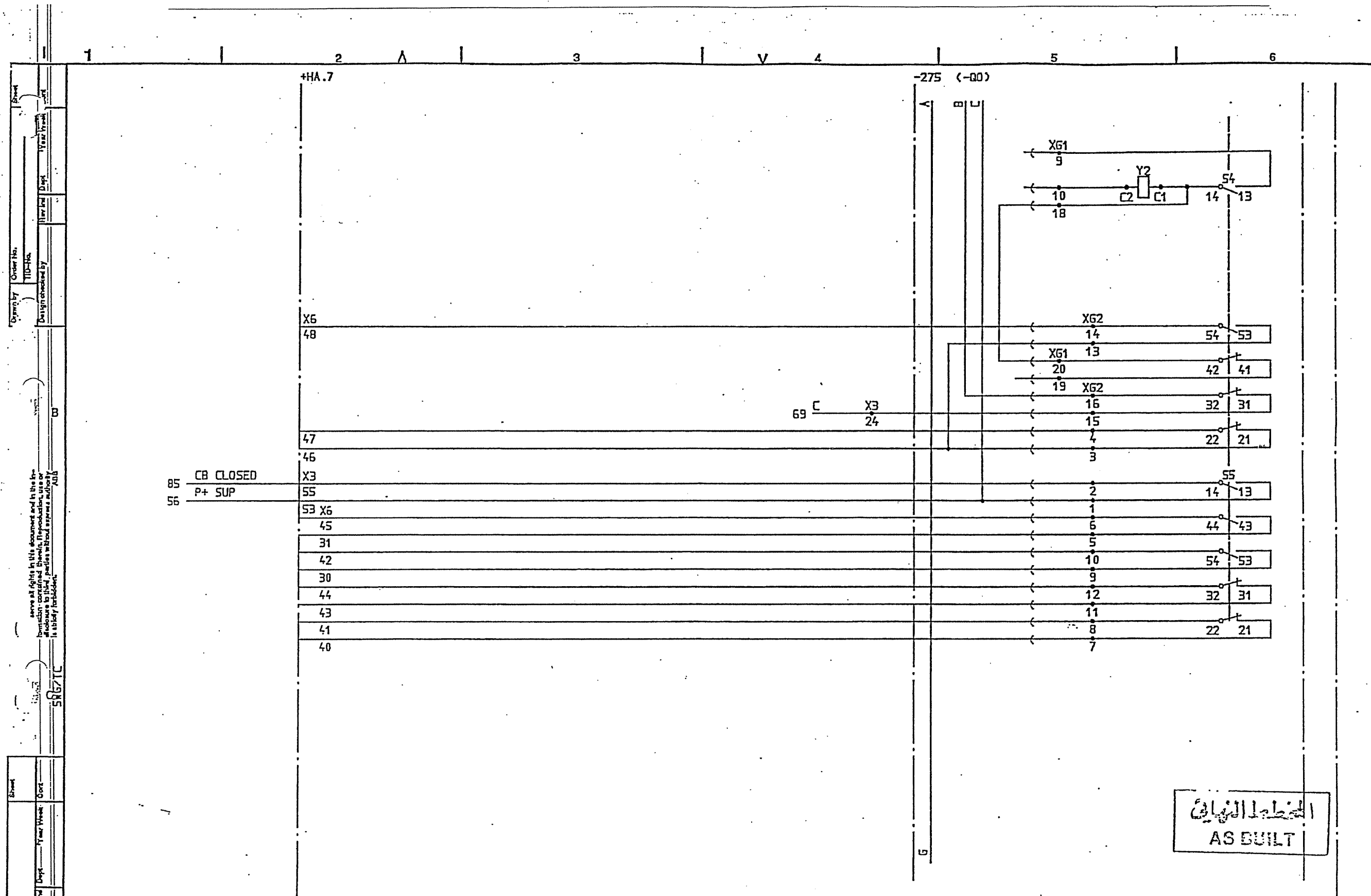




الخط الكهربائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:68/0		92-07-02 18.51		=2		33kV INTERCONNECTOR LINE		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev Ind Sheet	
2		SCECO SNAG		LS		92 26		Drawing checked by L SVENSSON		S/S 8501 132/33kV		Lang Sheet	
1		AS BUILT		LS		91 21		Drawn by SK		SCECO CENTRAL SAUDI ARABIA		Rev Ind Cont	
Rev Ind Revision		Appd Year Week		C.B. SELECTOR SWITCHES		Iss by Dept Year Week		ABB HV SWITCHGEAR		TDCF 90 36		2 68.10	





85 CB CLOSED
56 P+ SUP

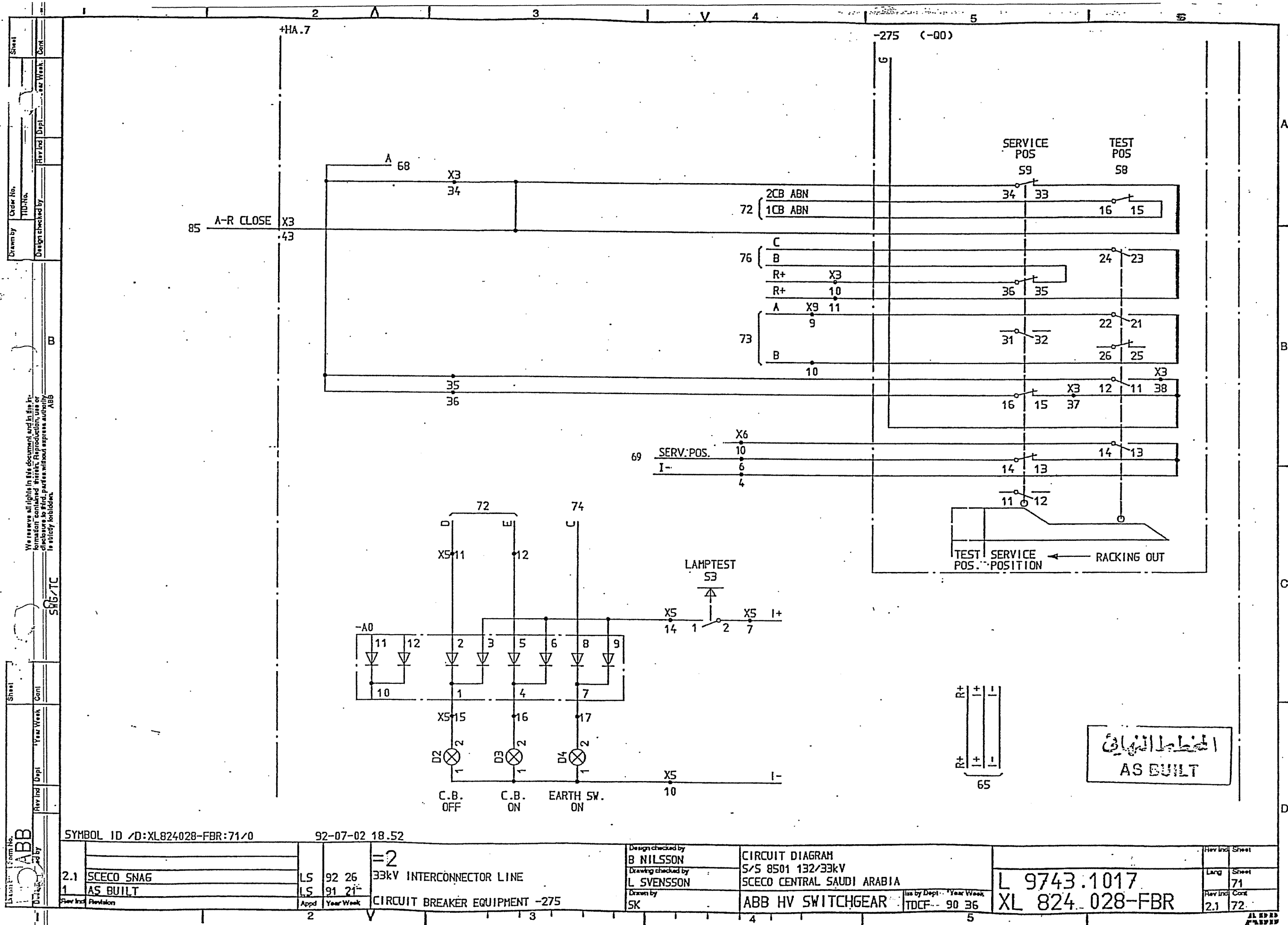
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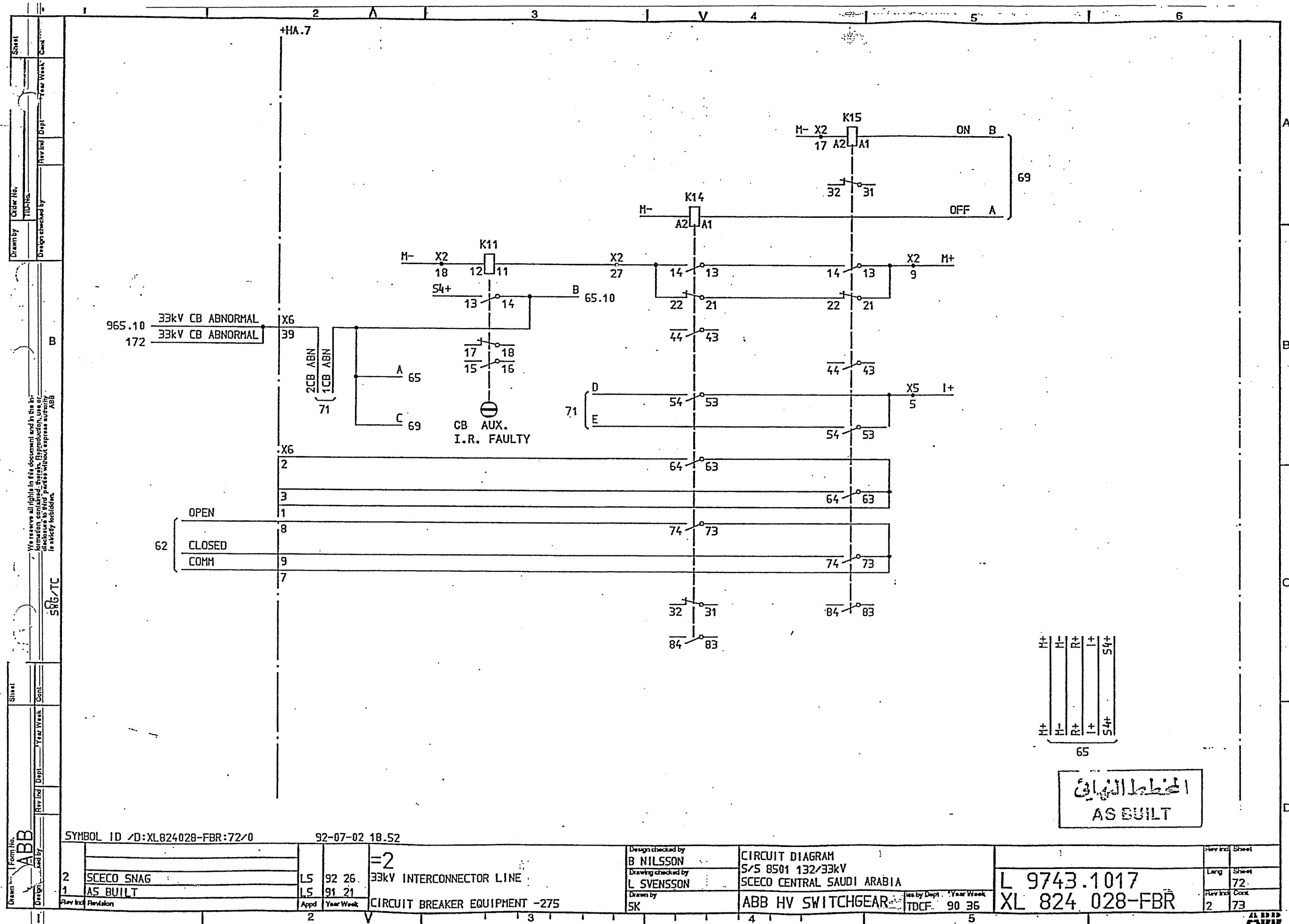
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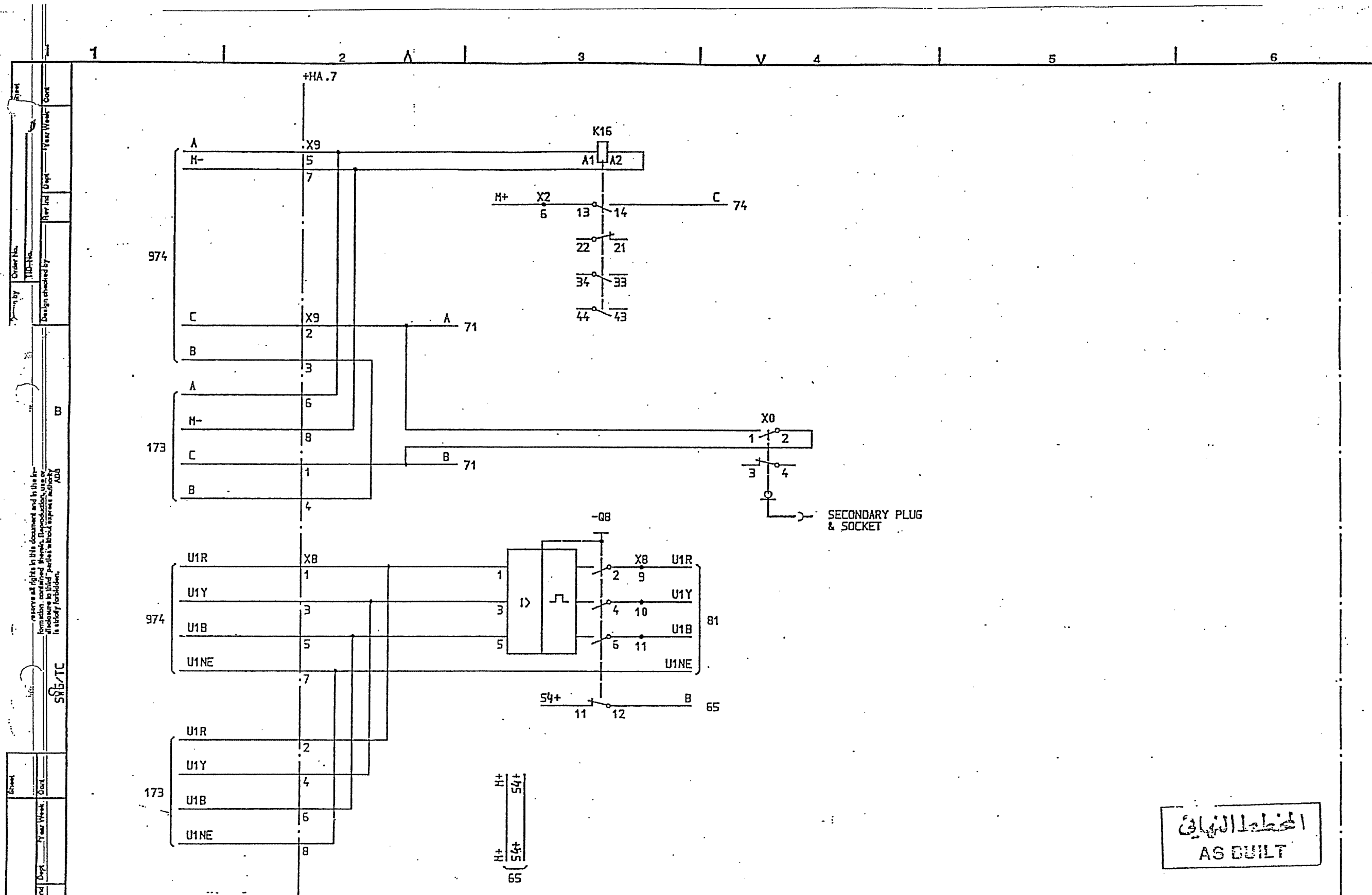
DATE 91-05-31 12.12

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AS BUILT										Drawing checked by L SVENSSON								XL 824 028-FBR		70			
CIRCUIT BREAKER EQUIPMENT -275										Drawn by SK		ABB HV SWITCHGEAR		TDCF 90 36						71			

ABB

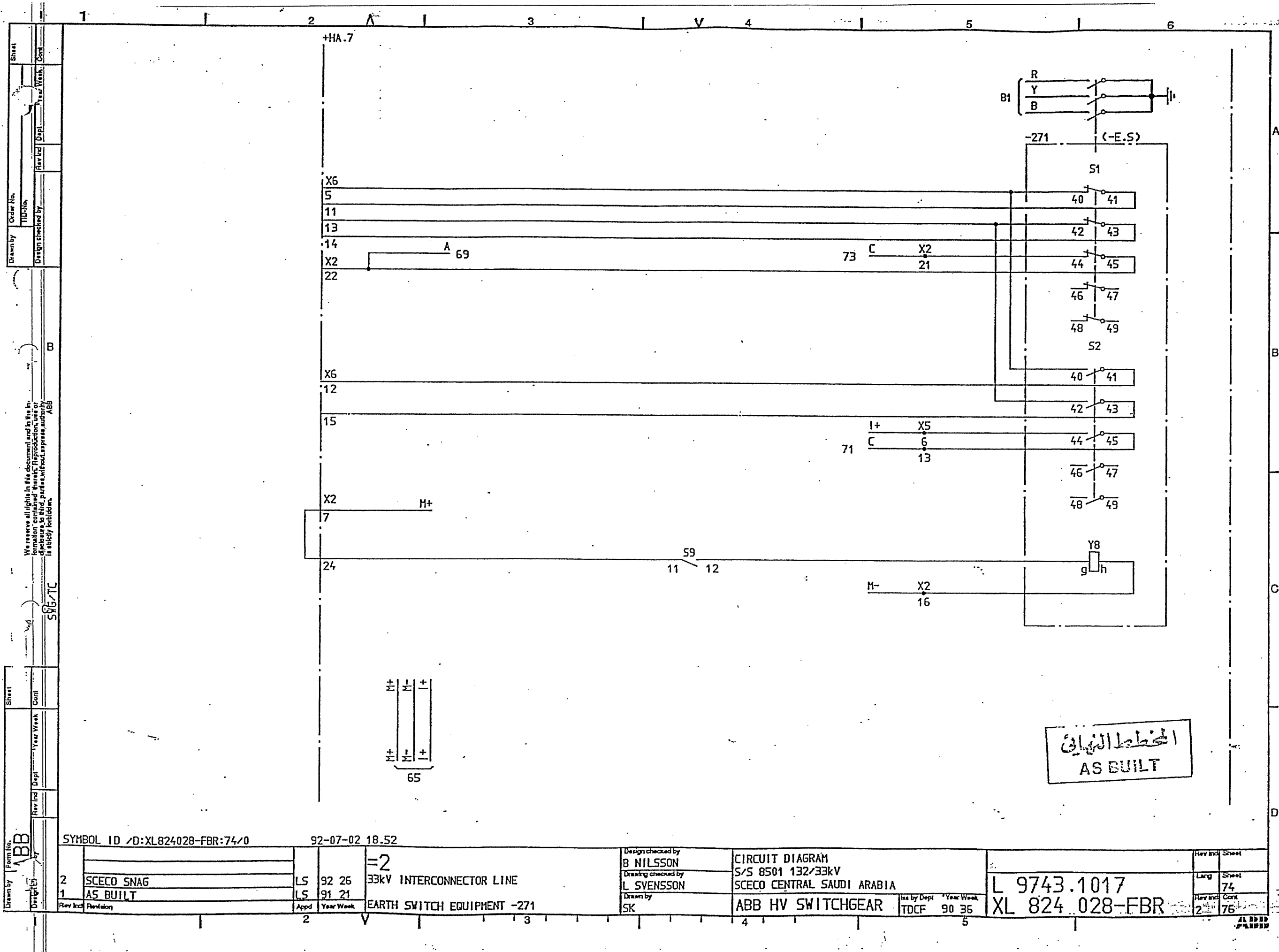


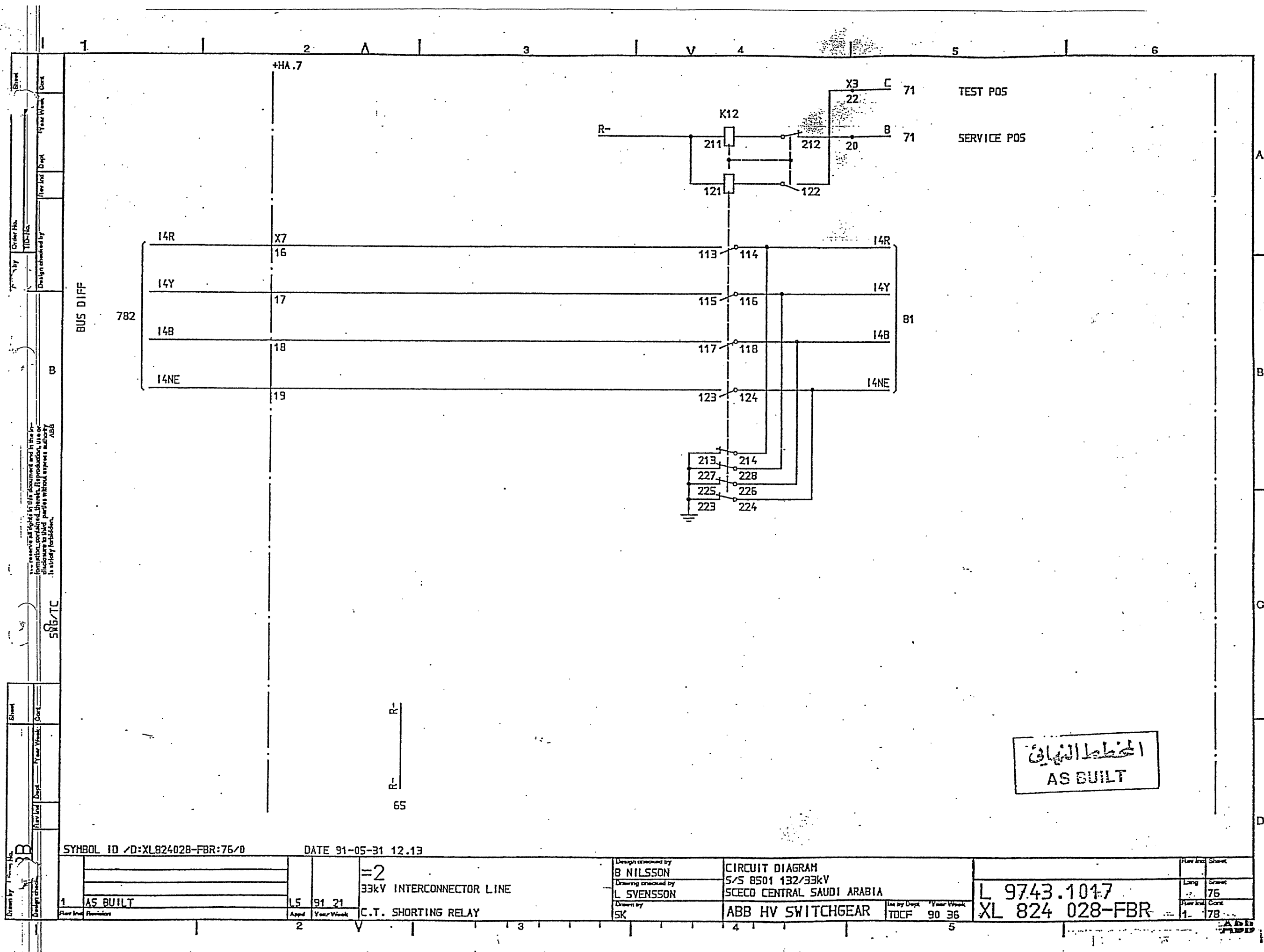




المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:73/0		DATE 91-06-05 10.02		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		Rev Int Sheet	
=2		33kV INTERCONNECTOR LINE		Drawing checked by L SVENSSON		L 9743.1017		Living Sheet	
1 AS BUILT		L5 91 21		INTERLOCKING RELAY FOR C.B. TRUCK		XL 824 028-FBR		73	
Rev Int Revision		Appd Year Week		SK		ABB HV SWITCHGEAR		Rev Int Sheet	
2		V		TDCF 90 36		5		74	





21 21

DIST. PROT

83 MAIN PROT TRIP

+HA.7

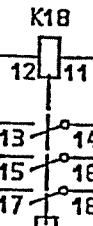
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TRIP INDIC.
94 - 1

56 P-

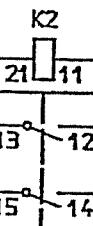
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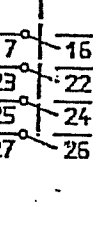
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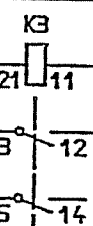
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87 BACK-UP PROT TRIP

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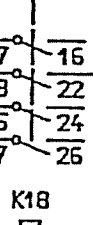
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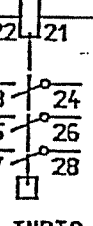
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68 P+



56 P-SUP

47



TRIP INDIC.
94 - BU

D/CME/F PROT

586/TC

المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:78/0

92-09-09 07.32

2 SCECO SNAG
1 AS BUILT

LS 92 26
LS 91 21

=2
33kV INTERCONNECTOR LINE
TRIP RELAYS 33kV

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

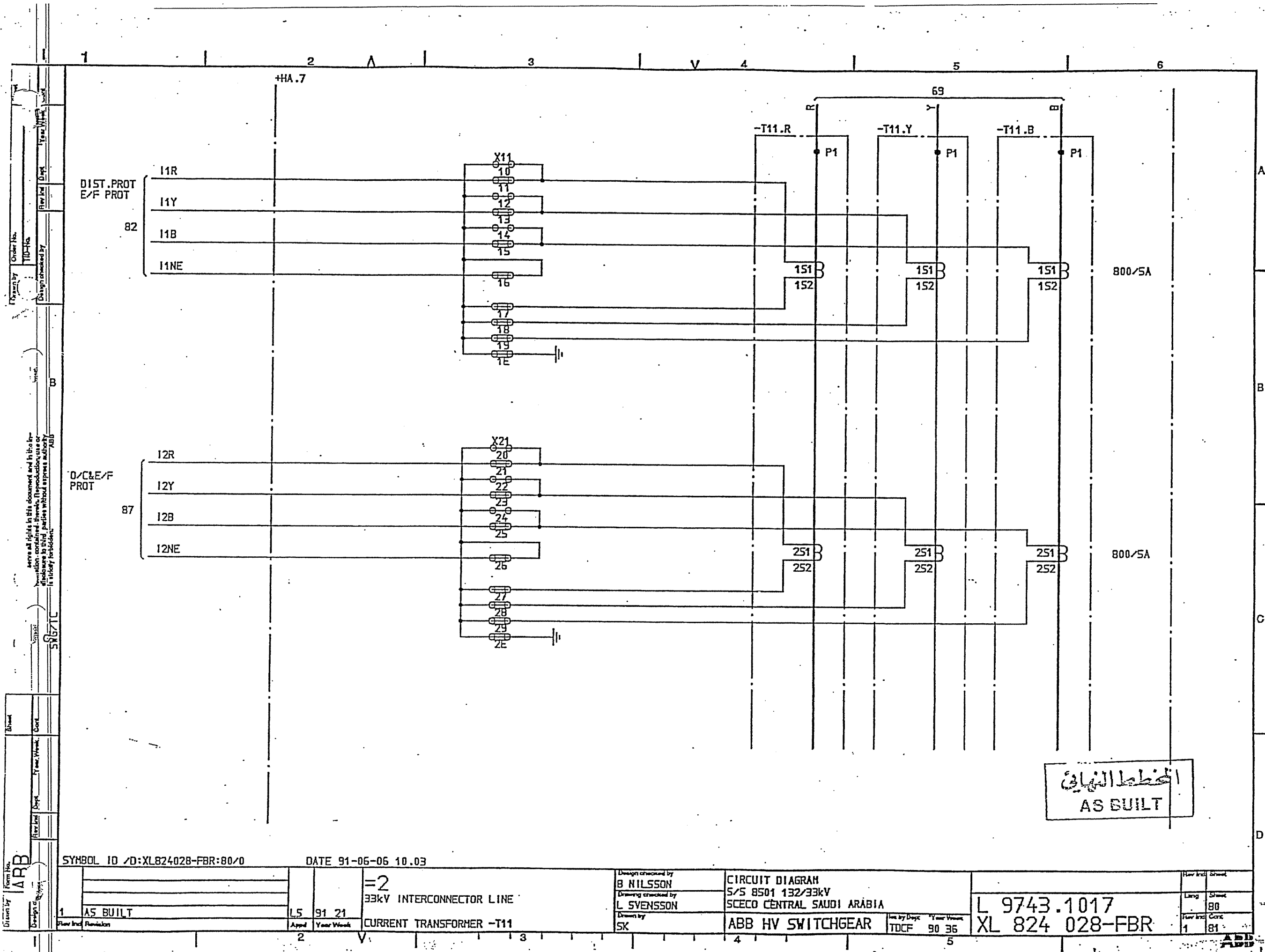
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

See by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824 028-FBR

Rev No. 2
Long 78
Short 80

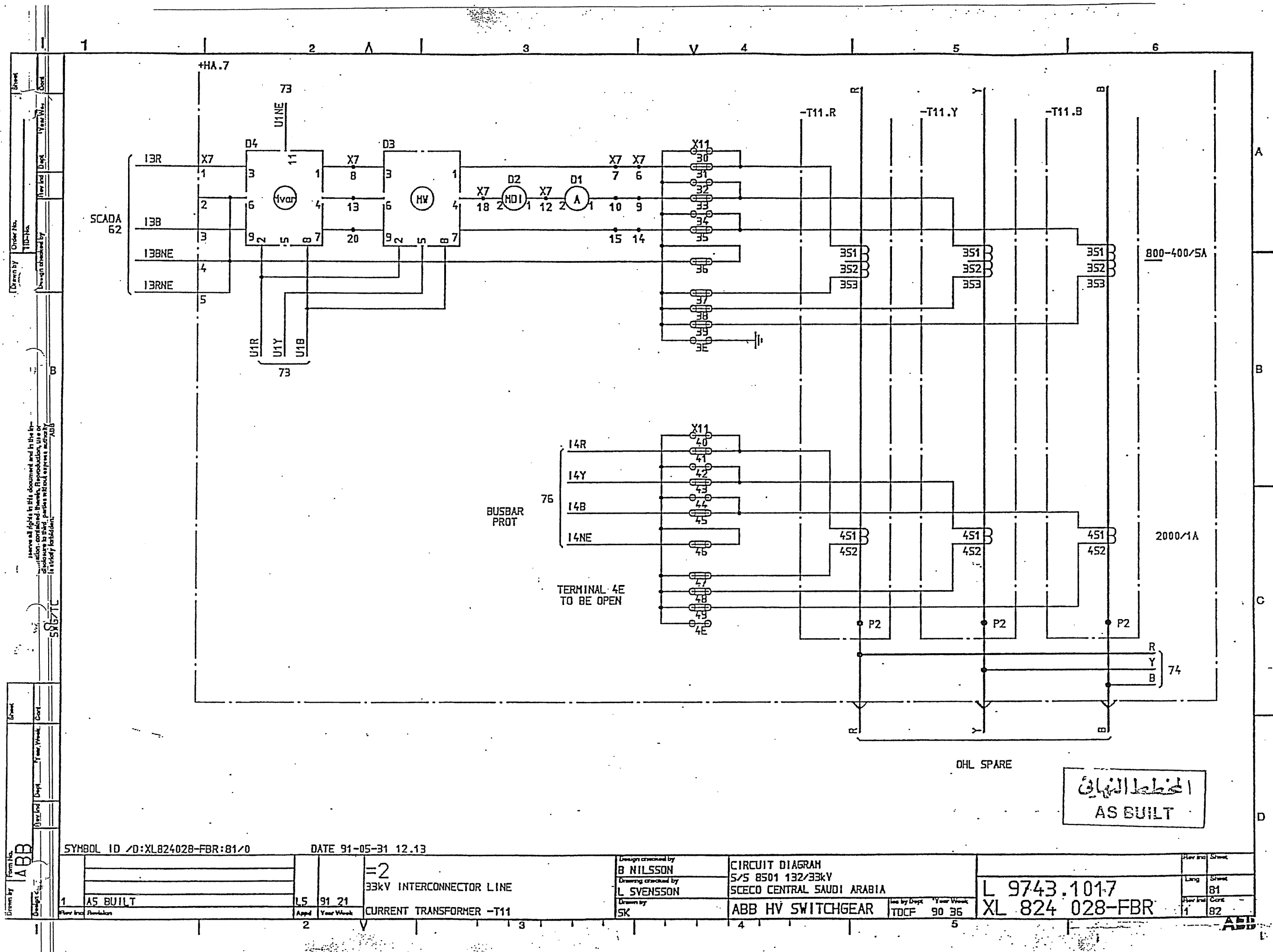
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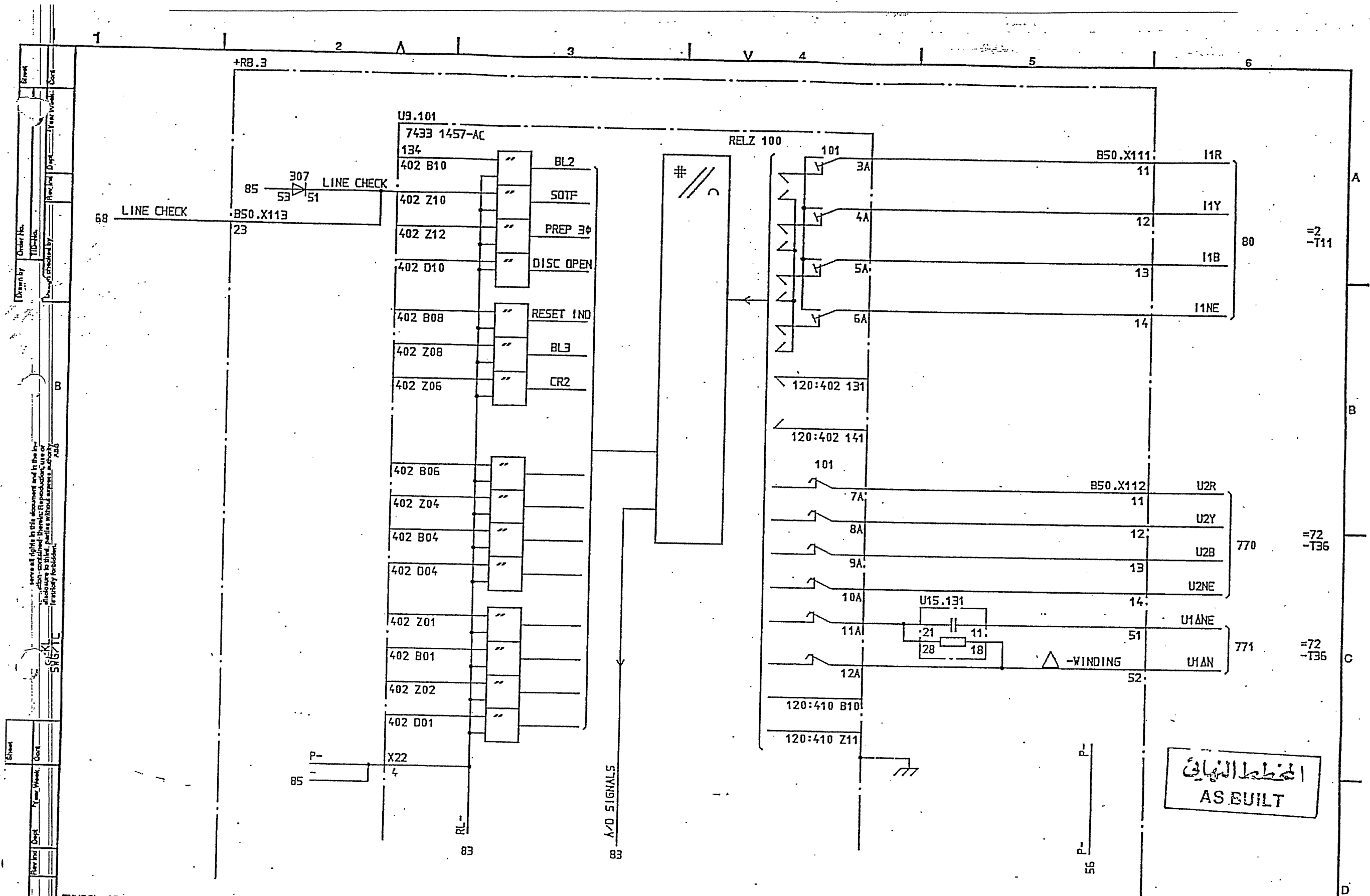


الخطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:80/0 DATE 91-05-06 10.03

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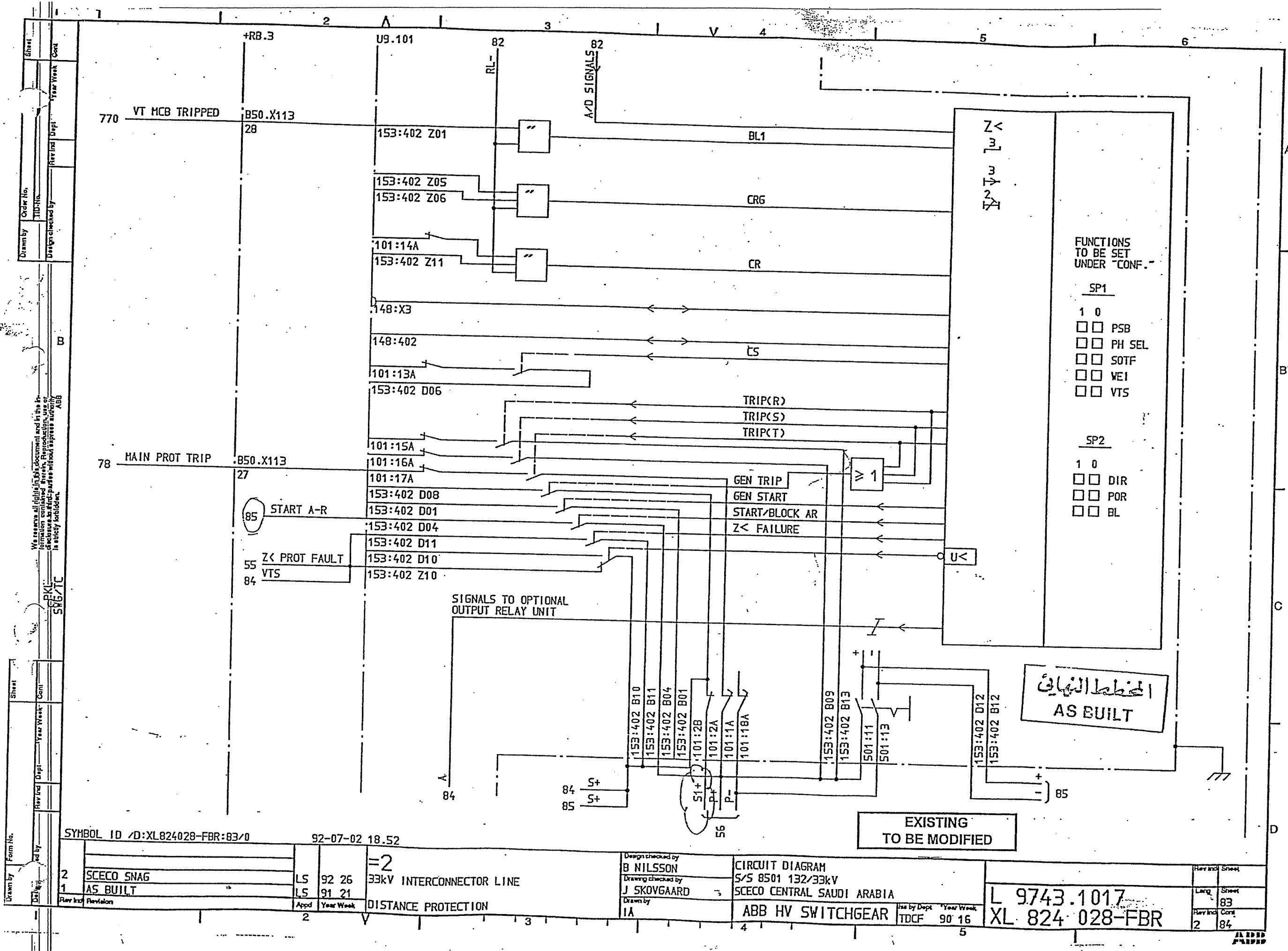
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AS BUILT

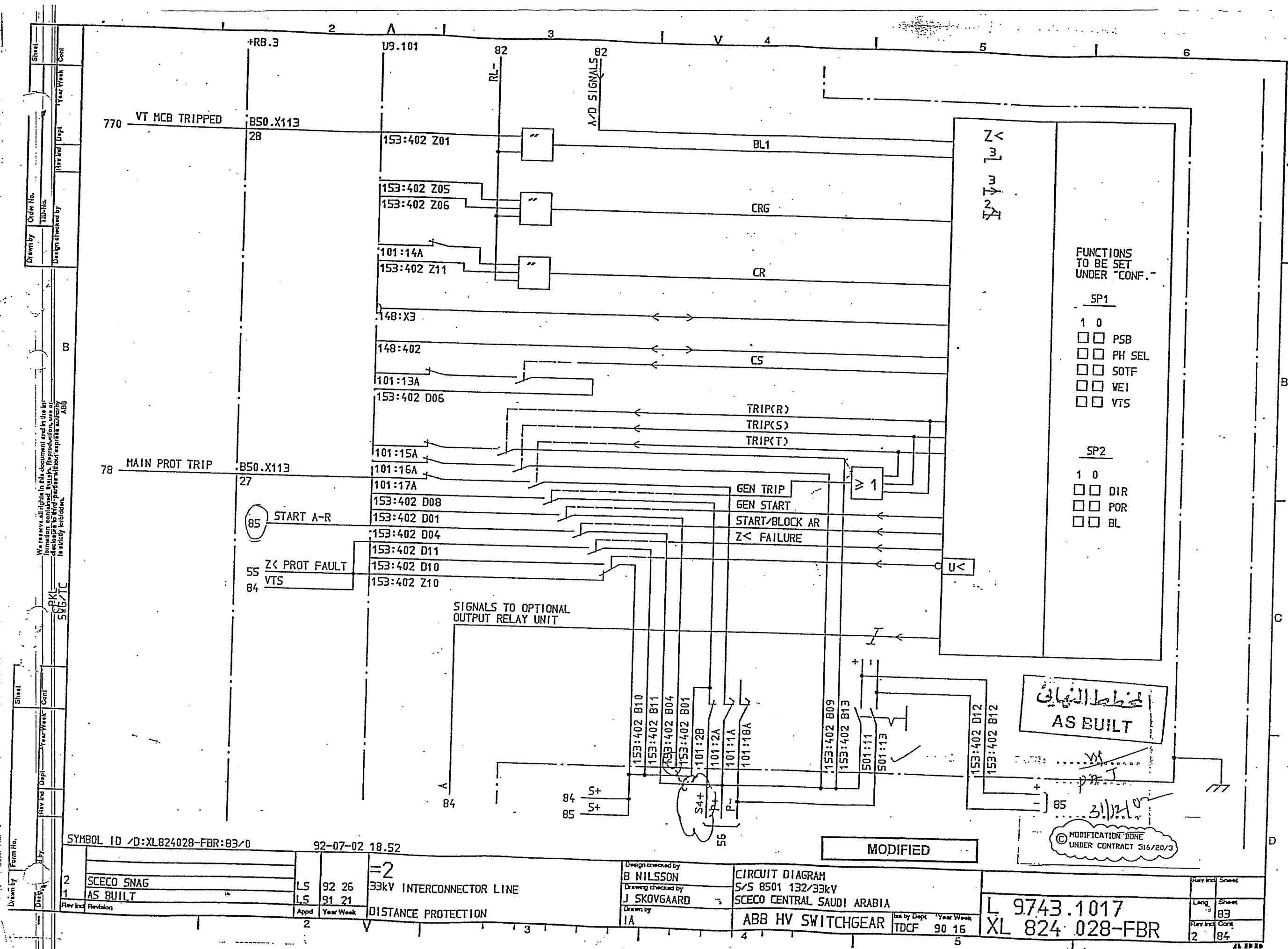
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DATE 91-06-06 10.04

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DISTANCE PROTECTION		Appd Year Week		DRAWING CHECKED BY J SKOVGAARD		SCECO CENTRAL SAUDI ARABIA		ABB HV SWITCHGEAR		Lang Sheet	
								TDCF 90 16		Rev Ind Cont	
										1 83	

L 9743.1017
XL 824 028-FBR





Order No.	Year Week
Design checked by	Year Week

Sheet	Year Week
Rev Ind	Year Week

DWG: S10114-AFAAO
SH : 172
K124 A/B

X63 F
9
33kV
PROT OP

B50. ZC
X41 PROT OP

23 O/C-E/F
87 PROT OP

83 VTS

SYMBOL ID /D:XL824.028-FBR:84/0

92-07-02 18.52

=2

33kV INTERCONNECTOR LINE

DISTANCE PROTECTION

Design checked by
B NILSSON
Drawing checked by
J SKOVGAARD
Drawn by
TA

CIRCUIT DIAGRAM
5/5 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TDCF 90 16

L 9743.1017
XL 824 028-FBR

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2	85

RLKG 100 OPTION

DIAGRAM (SETTING UNDER "CONF")

RELAY	1	2	3	4	5	6	7	8	9	10
K1	BLCK	BLCK	T3U	TRI	TRWEI	TRI	BLCK	TRLC	TRLC	TRLC
K2	TRLC	GS	VTS	TRLC	TRLC	TRLC	ST3I0	ST3I0	GS	GS
K5	TRC	PSB	ECHO	PSB	PSB	PSB	PSB	TRC	TRC	TRC
K8	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH
K10	GS	FI1	TRZ1	TRIP3PH	SUP	TRIP3PH	TRZ1	TRIP3PH	FI1	TRIP3PH
K3	ZM1	TRZ1	TRC	TRIPR	PSR	TRIPR	TRWEI	TRIPR	TRZ1	ZM1
K14	ZM2	TRZ2	TRLC	TRIPS	PSS	TRIPS	TRLC	TRIPS	TRZ2	ZM2
K15	ZM3	TRZ3	TRWEI	TRIPT	PST	TRIPT	TREF	TRIPT	TRZ3	ZM3
K9	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
K6	CR1	CR1	CR1	CR1	CR1	CR1	CR1	CR1	CR1	CR1
K7	AR	SUPN	PSB	AR	CS	AR	CS2	AR	CS	CR1
K4	NDS	SUPI	SUP	SUP	CR1	SUPI	CR2	SUP	SUP	GT
K11	TRZ1	PSR	PSR	TRZ1	ZM1	CS	CS2	TREF	PSR	AR
K13	TRZ2	PSS	PSS	TRZ2	ZM2	CR1	CR2	TREF	PSS	PSR
K12	TRZ3	PST	PST	TRZ3	ZM3	TRC	SUPN	CS2	PST	PSS
K16	TRZ3R	PSN	PSN	TRZ3R	ZM3R	TRZ1	SUPI	CR2	PSN	PST
										PSN

PLANT ADAPTED PROGRAMMING
STANDARD PROGRAMMING AT DELIVERY X

RLKG 100



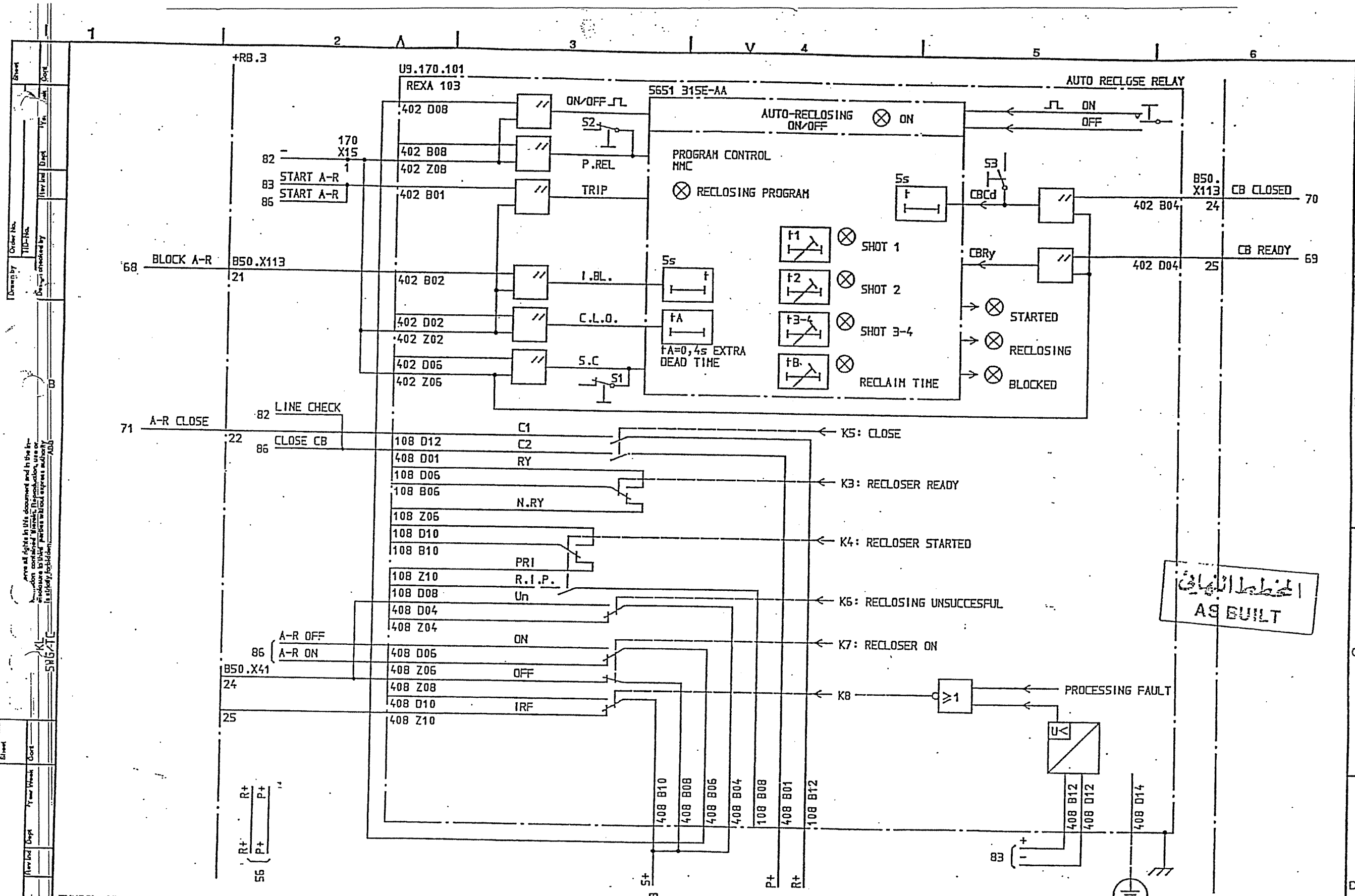
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AS BUILT

MODIFICATION DONE
UNDER CONTRACT 516/20/3

MODIFIED

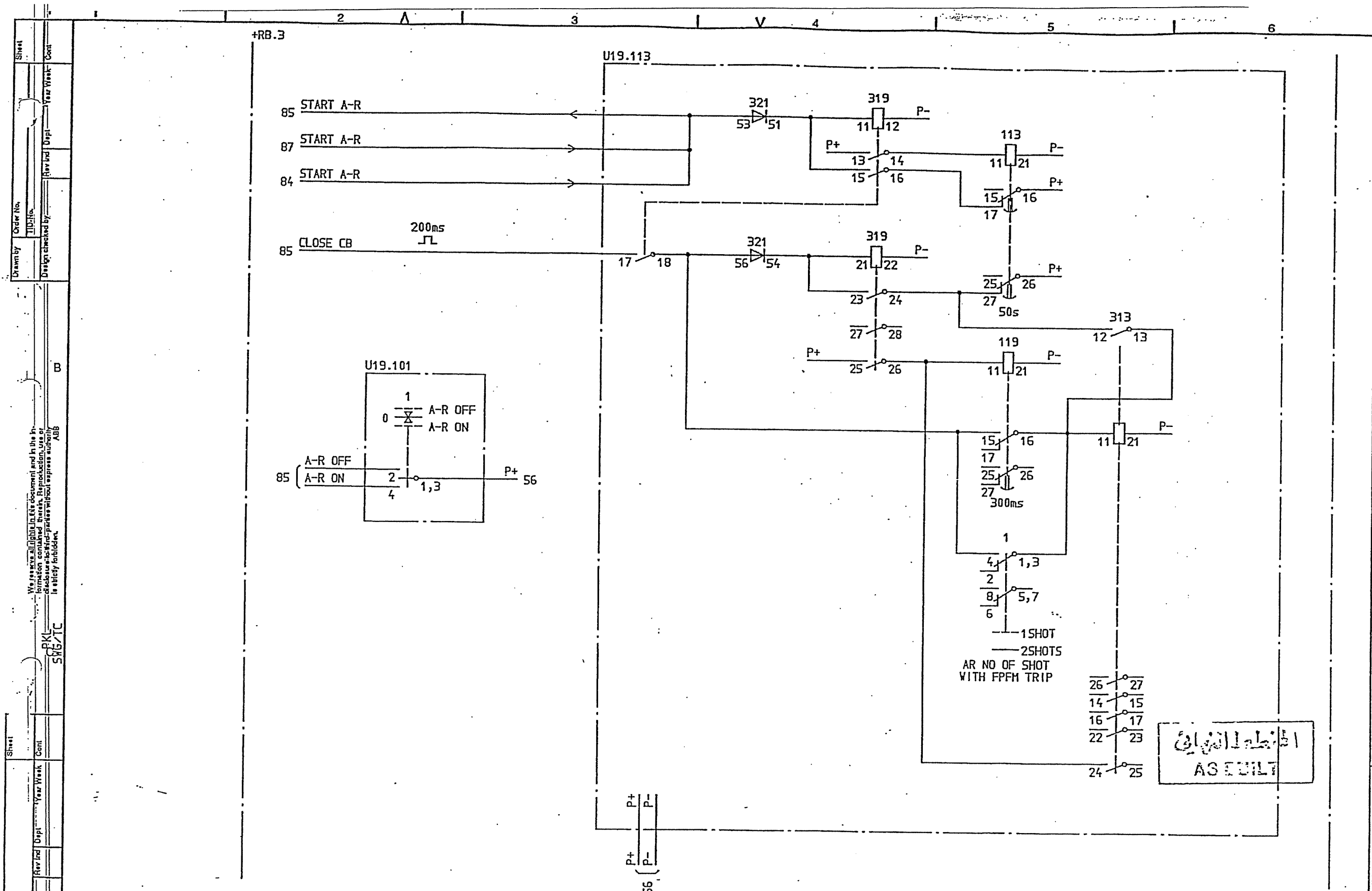
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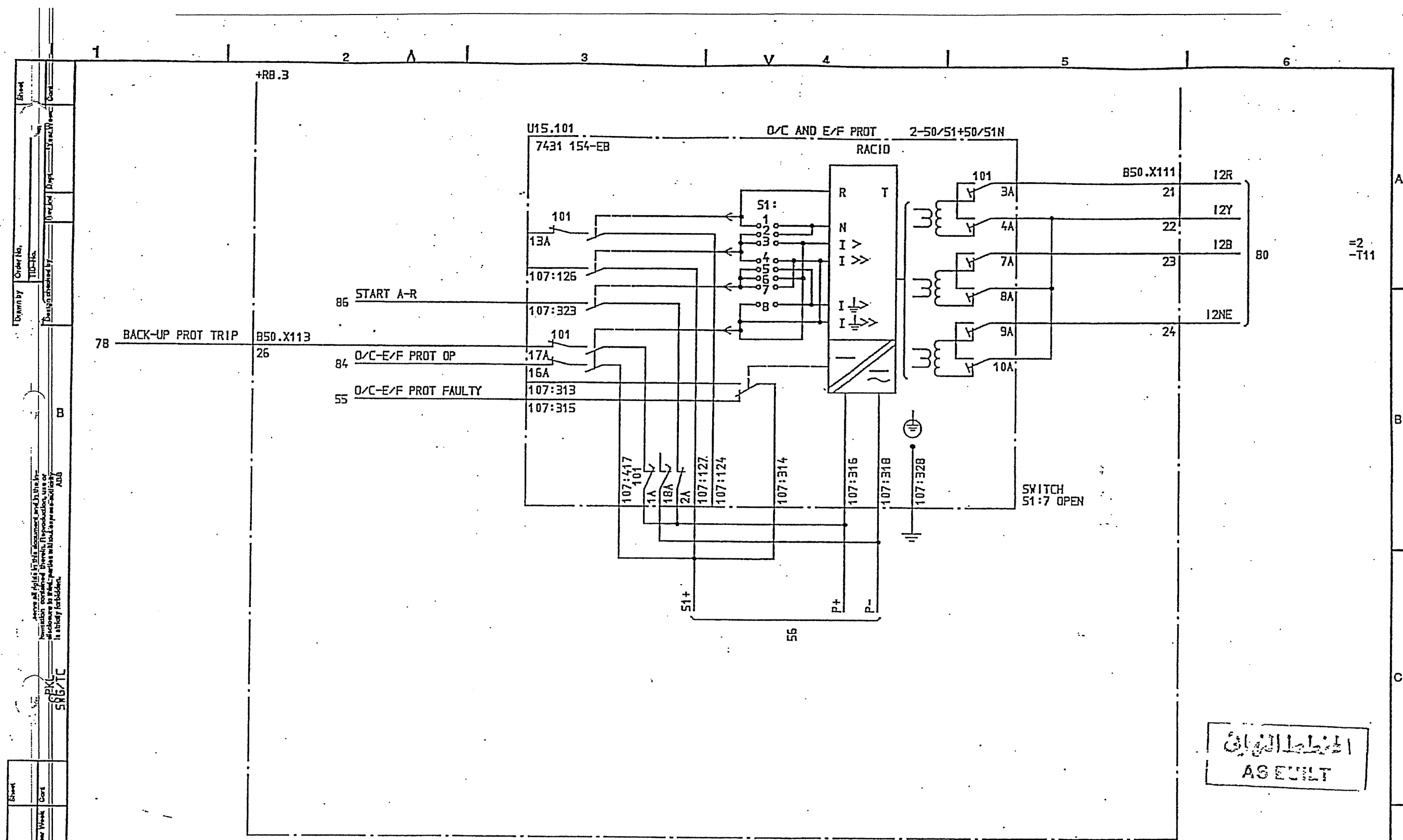
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AS BUILT		LS 91 21		Appd		Year Week		Design checked by		B NILSSON		Drawing checked by		J SKOVGAARD		Iss by Dept	
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Rev Ind		Revision		Appd		Year Week		IA		TDCF		90 16		1		86	



SYMBOL ID /D:XL824028-FBR:86/0		92-07-02 18.52		=2		33kV INTERCONNECTOR LINE		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		Rev Ind Sheet	
2	SCECO SNAG	LS	92 26	1	AS BUILT	LS	91 21	Design checked by	B NILSSON	Iss by Dept	Year Week	2	86	Lang	Sheet
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Rev Ind Revision		Appd		Year Week		AUTO RECLOSE RELAY LOGIC		Drawn by		IA		ABB HV SWITCHGEAR		L 9743.1017	
												XL 824-028-FBR		2	

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PAGE



الخط الكهربائي
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EXISTING
TO BE MODIFIED

SYMBOL ID /D:XL824-028-FBR:87/0

DATE 91-05-31 12.13

1	AS BUILT	L5	91 21	33kV INTERCONNECTOR LINE
2				OVERCURRENT AND EARTH FAULT

Design created by
B NILSSON
Drawing checked by
J SKOVGAARD
Drawn by
IA

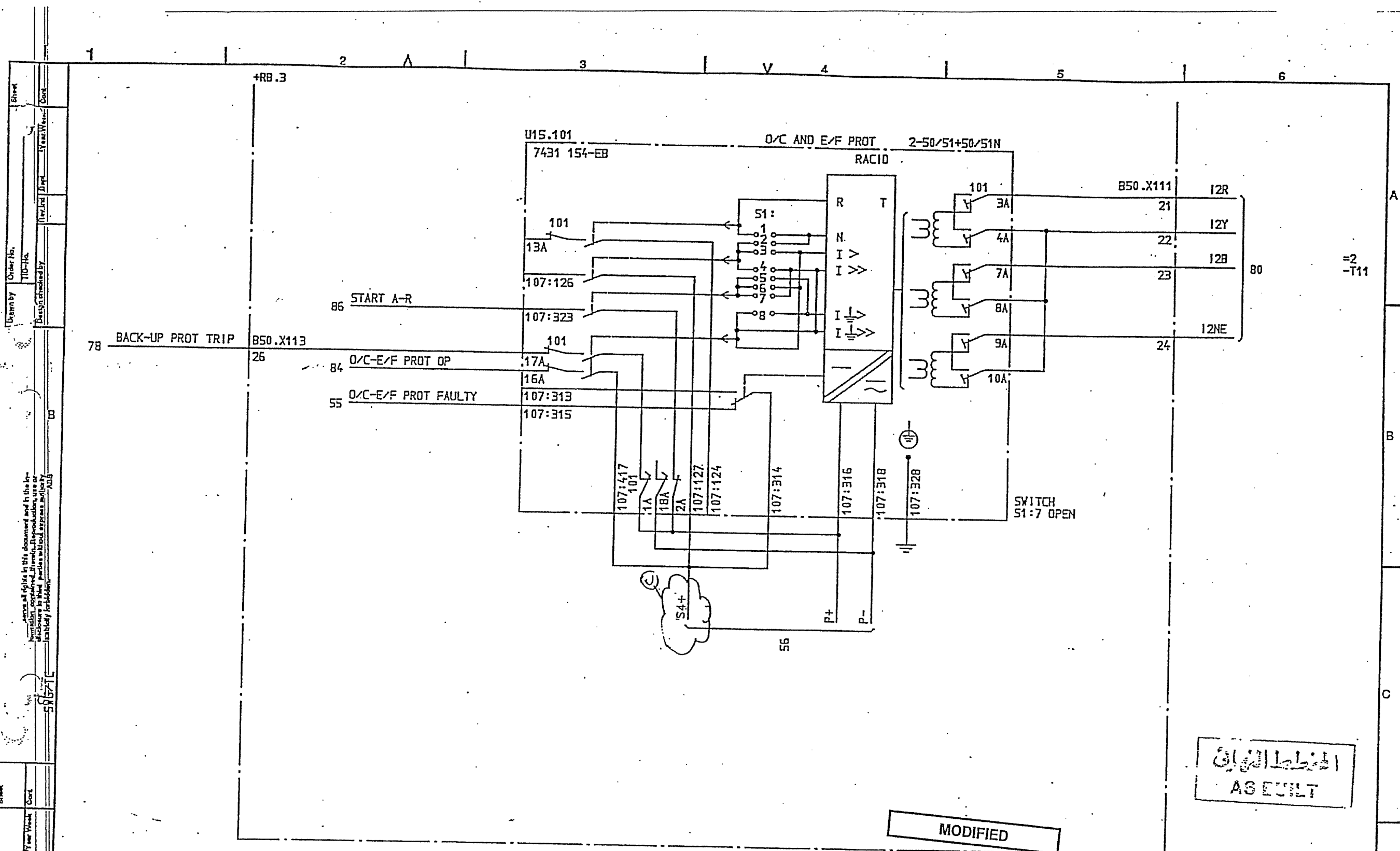
CIRCUIT DIAGRAM
S/S B501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Issued by Dept
TDCF 90 15

L- 9743.1017
XL 824-028-FBR

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1	101	87

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UNDER CONTRACT 516/20/3

31/12/02
P.A.J.

SYMBOL ID /O:XL824028-FBR:87/0

DATE 91-05-31 12.13

1	AS BUILT	15	91 21	OVERCURRENT AND EARTH FAULT
2				

Design checked by
B NILSSON
Drawing checked by
J SKOVGAARD
Drawn by
1A

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TDCF 90 15

L- 9743.1017
XL 824-028-FBR

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ABB

ITEM	DESIGNATION	SHEET
+KA.1	VOLTAGE DISTRIBUTION	107
+XA.1	SCADA INTERFACE EQUIPMENT	112
+HA.3	AUX. VOLTAGE SUPPLY	115
	HEATING AND LIGHTING	116
	C.B. OPERATION CIRCUITS	118
-375	CIRCUIT BREAKER EQUIPMENT	119
	INTERLOCKING	123
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	OVERCURRENT PROT.	128
-T30	CURRENT TRANSFORMER	130
-371	EARTH SWITCH EQUIPMENT	135
-375	CIRCUIT BREAKER EQUIPMENT	140
-305	CB 305 CLOSING AND TRIPPING CIRCUIT	141-143
-375	CB 375 CLOSING AND TRIPPING CIRCUIT	144-145
-375	DC SUPPLY LOOPING ±R1±R2	146-147

الخطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:101/0

DATE 91-05-31 12.13

1	AS BUILT	LS	91 21	3	33kV INCOMING TRANSFORMER BAY LIST OF CONTENTS
Rev Ind	Revision	Appd	Year Week		

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA

ABB HV SWITCHGEAR

Iss by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824 028-FBR

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B	100-100	AAB	91 05	1	1	12.13	12.13

SYMBOL ID /D:XL824028-FBR:107/0 DATE 91-05-31 12.13

SHEET	DISTR SIDE /1	TERMINAL	SUPPLY SIDE /2
CIRCUIT	/	REH R1+	125V DC
=10 -FBA:15	=3 REH R1+	+KA.1. K1.X113 1 2 3 4	REH R1+ 118

AS BUILT

L5 91 21

Appd Year Week

=3

33kV INCOMING TRANSFORMER BAY

CB OPERATION

VOLTAGE DISTRIBUTION

Design checked by
B NILSSON

Drawing checked by
S STRIDSHAN

Drawn by
IA

CIRCUIT DIAGRAM

S/S 8501 132/33kV

SCECO CENTRAL SAUDI ARABIA

ABB HV SWITCHGEAR

L 9743.1017 -

XL 824 028-FBR

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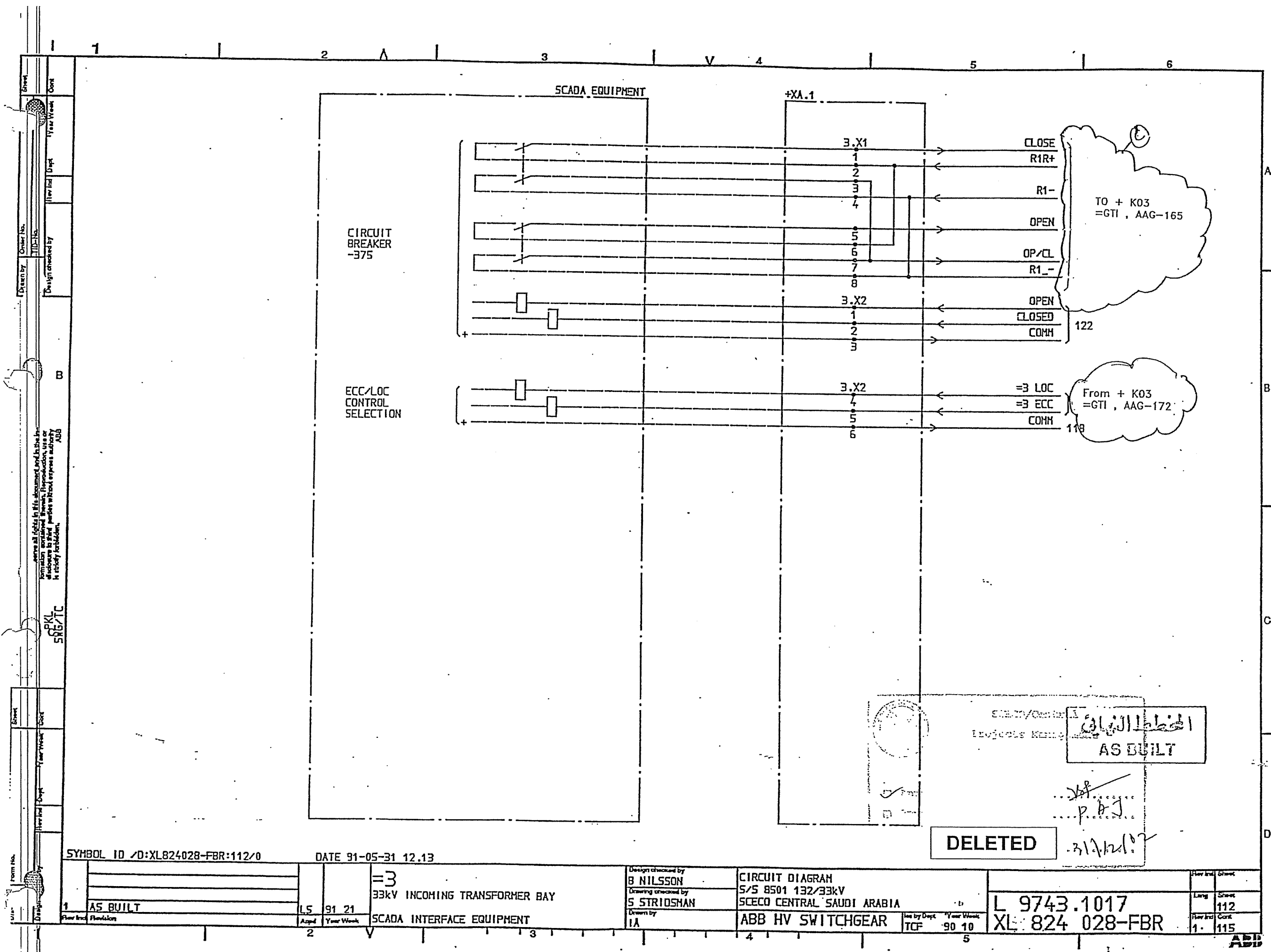
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107

112



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Year Week
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B
PKL
SNG/TC
Date
Year Week
Cont
User
Form No.

SYMBOL ID /D:XL824028-FBR:112/0

DATE 91-05-31 12.13

1	AS BUILT	LS	91 21	=3 33kV INCOMING TRANSFORMER BAY SCADA INTERFACE EQUIPMENT
2		Aspl	Year Week	

Design checked by
B NILSSON
Drawing checked by
S STRIDSHAN
Drawn by
IA

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TCF
Year Week
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5

L 9743.1017
XL 824 028-FBR

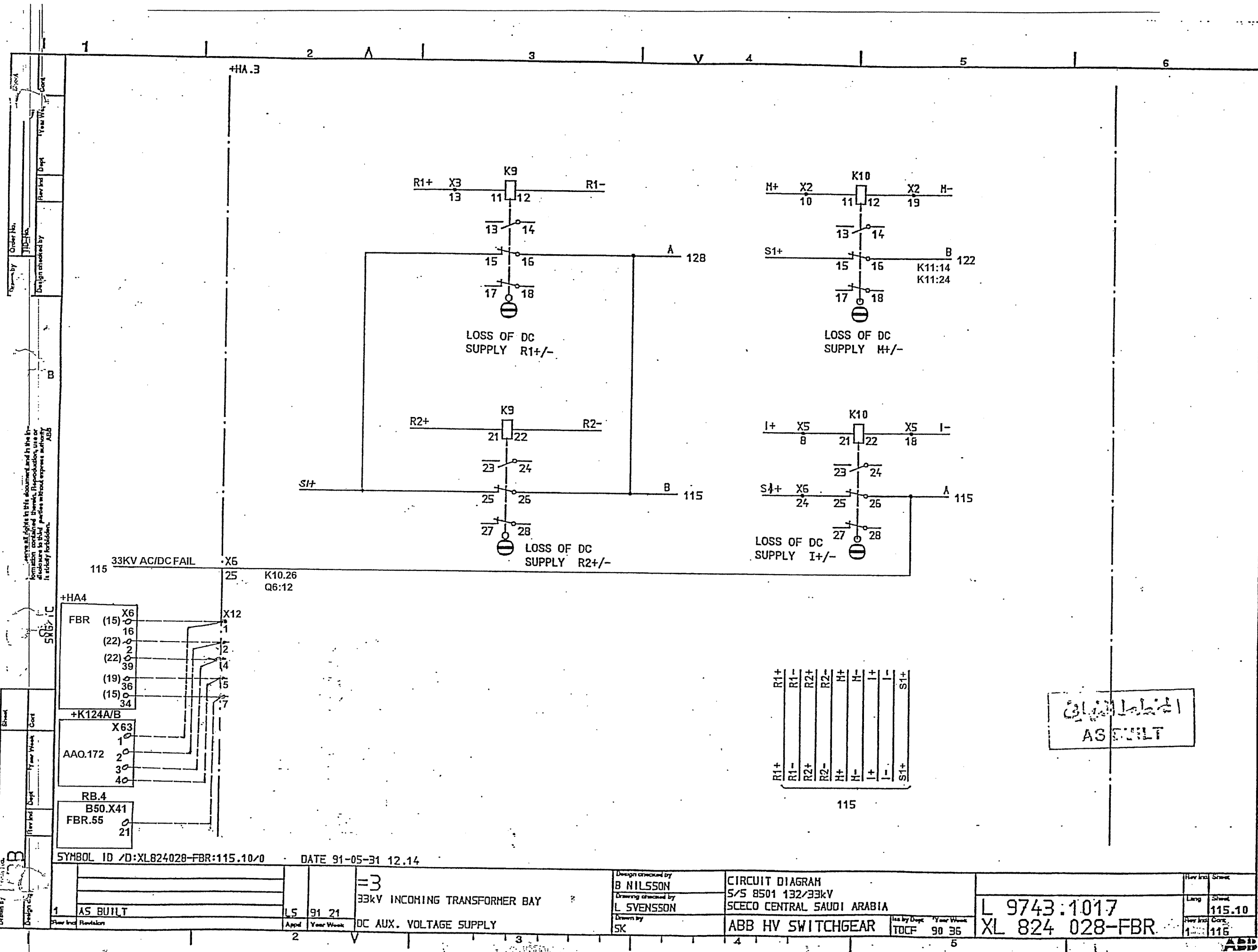
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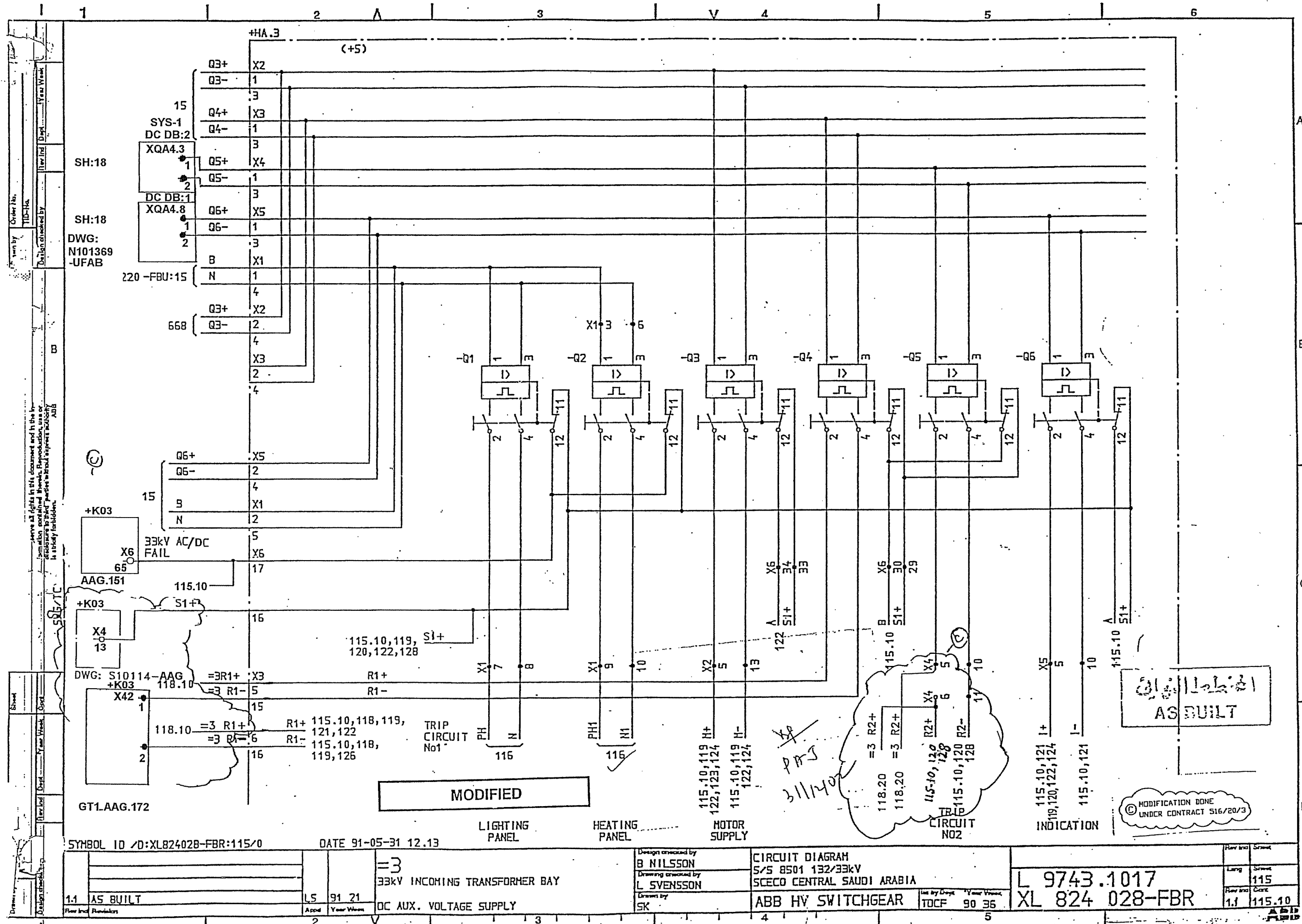
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المخطط الكهربائي
AS BUILT

31/12/97

ABB





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Design checked by	Order No.	Design checked by	Order No.	Year	Week	Cont		

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SRG/TC

SYMBOL ID /D:XL824028-FBR:116/0

DATE 91-05-31 12.14

1	AS BUILT	15	91	21
Rev	Ind	Reason	Appd	Year

33kV INCOMING TRANSFORMER BAY
HEATER AND LIGHT

Design checked by	B NILSSON
Drawing checked by	L SVENSSON
Drawn by	SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA *

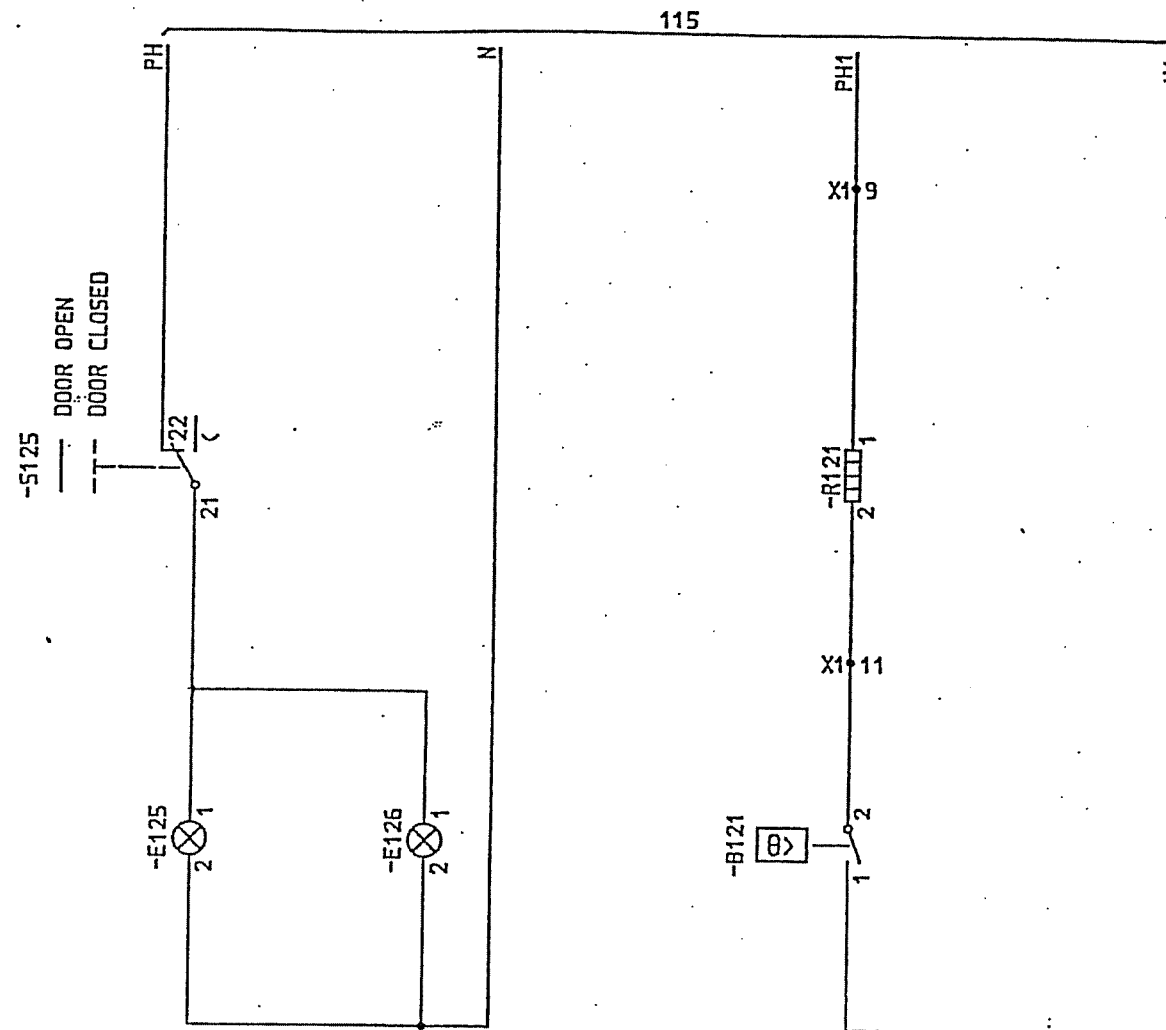
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Year Week	90 36

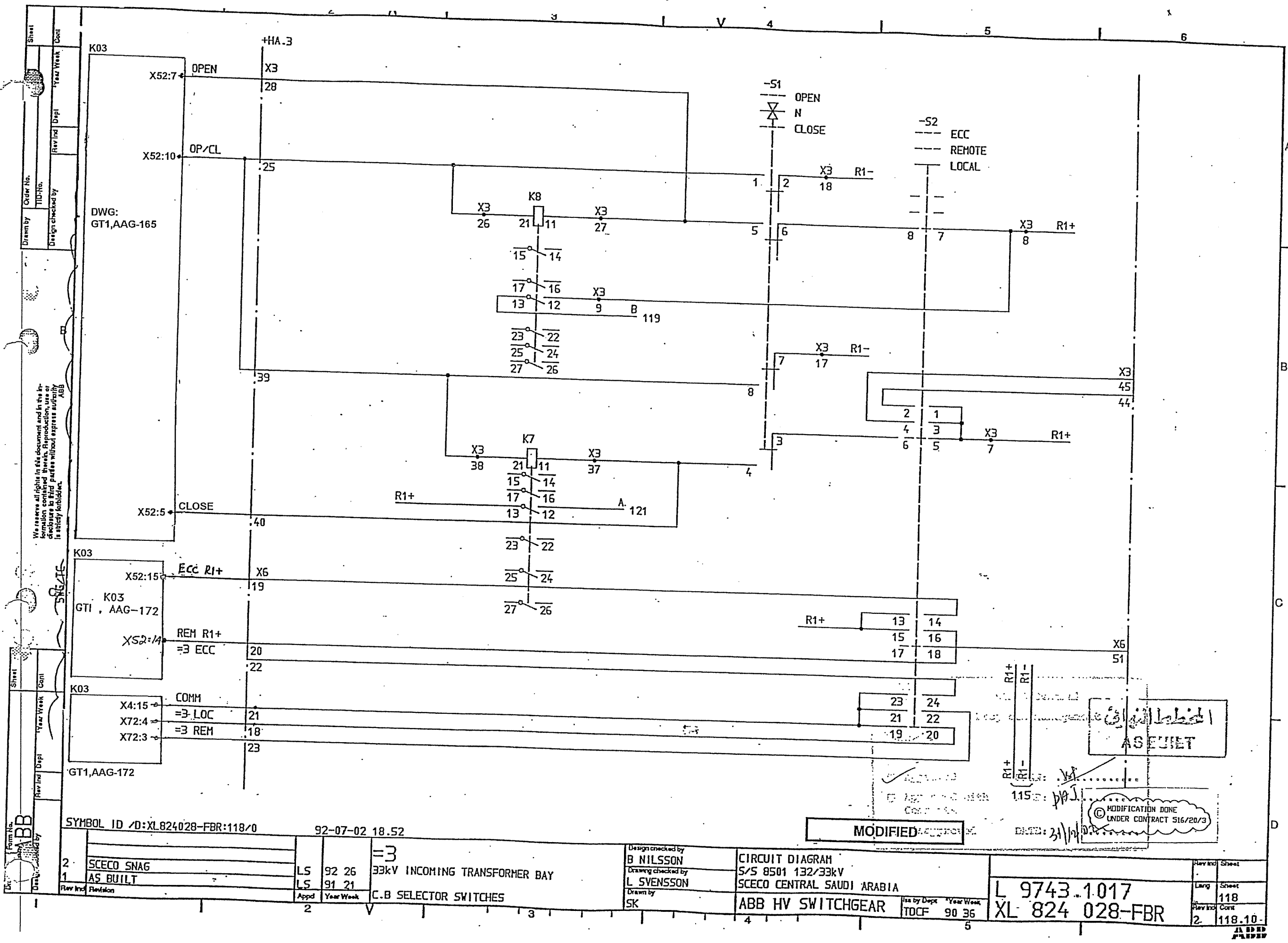
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1	118	116

الهيئة العامة
AS BUILT

#HA.3





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UNDER CONTRACT 516/20/3

MODIFIED

SYMBOL ID /D:XL824028-FBR:118/0 92-07-02 18.52

2	SCECO SNAG	LS	92 26	=3	33kV INCOMING TRANSFORMER BAY
1	AS BUILT	LS	91 21		
Rev	Inc	Revision	Appd	Year Week	C.B SELECTOR SWITCHES

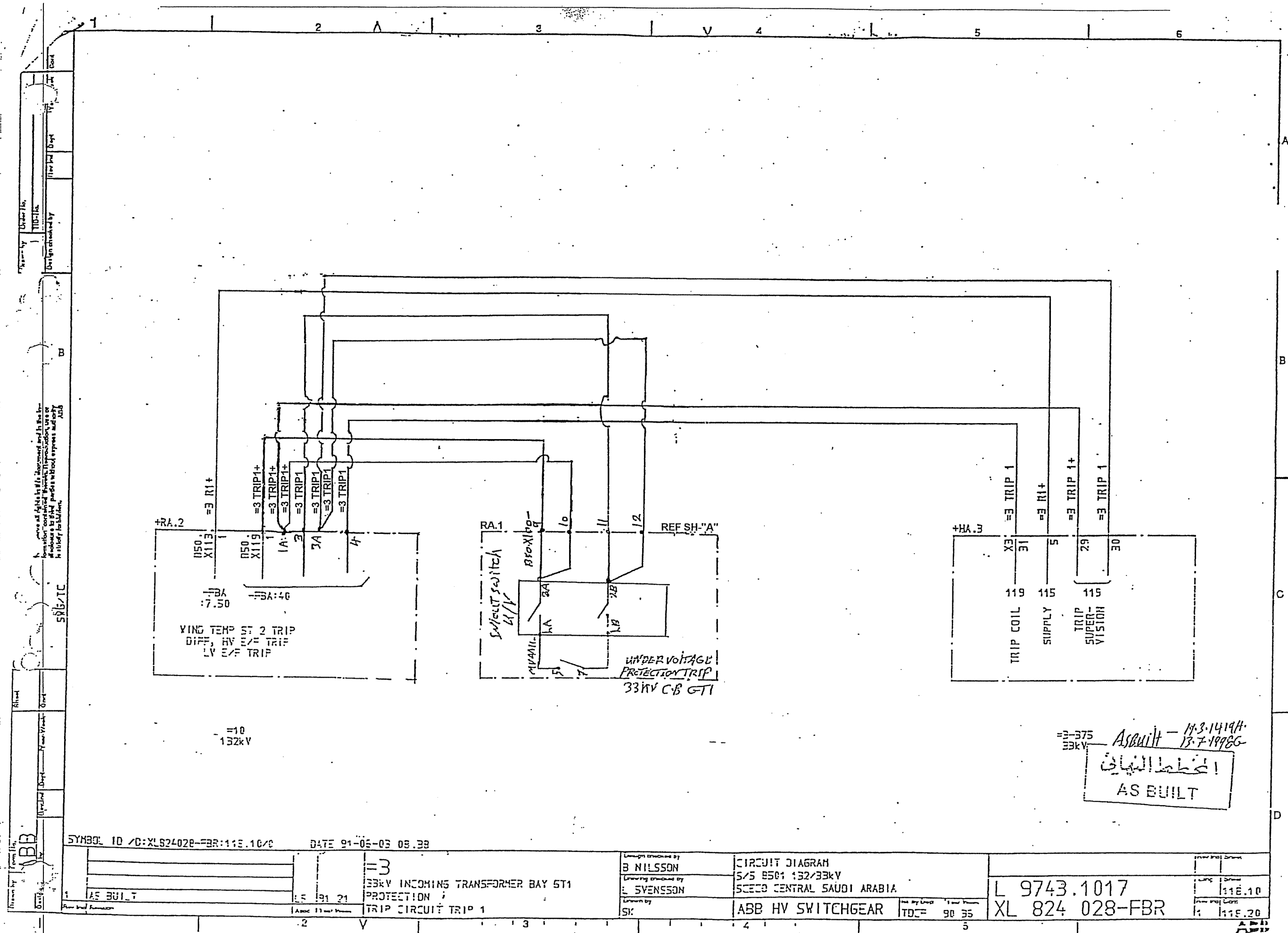
Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
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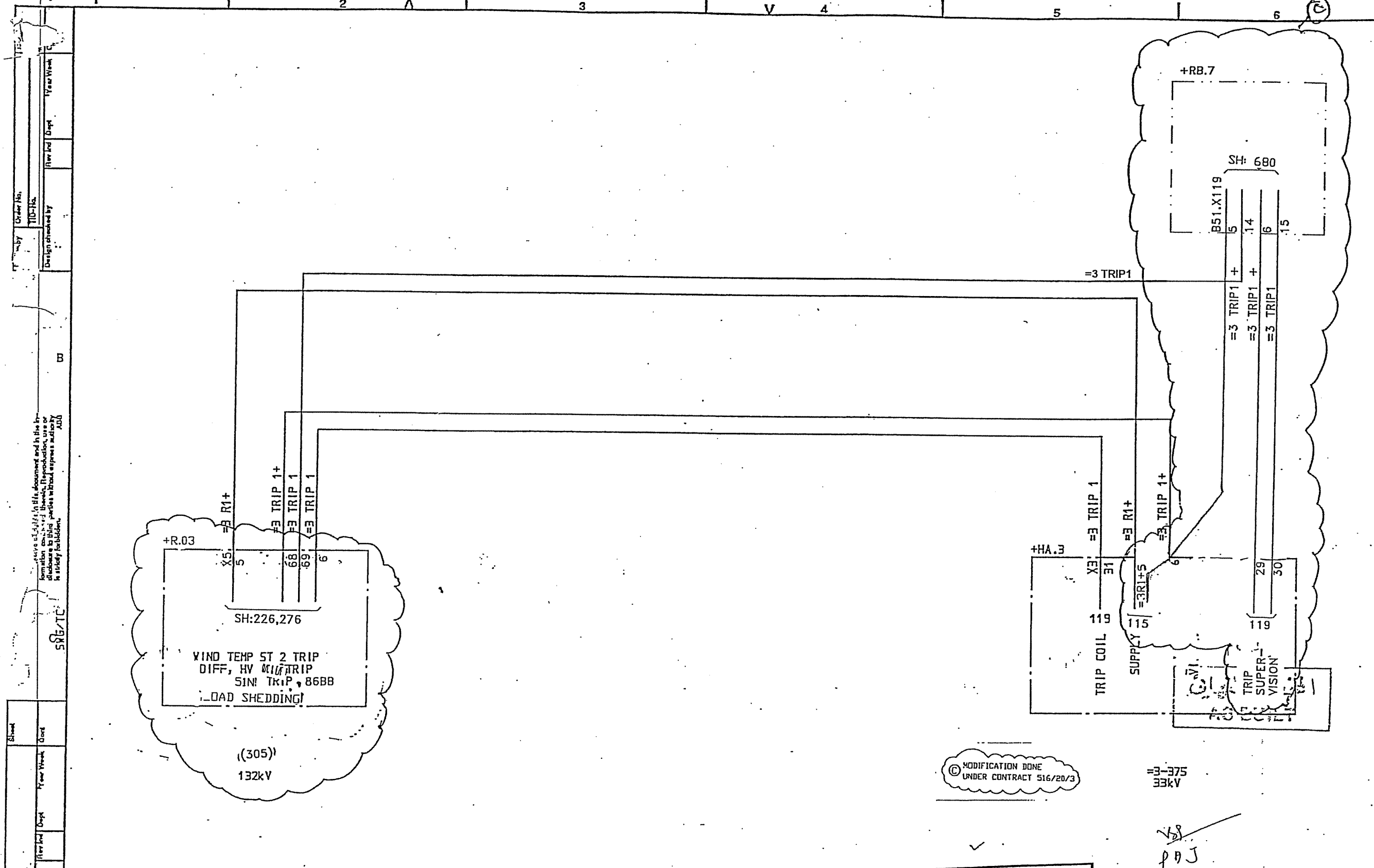
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TDCF 90 36

L 9743.1017
XL 824 028-FBR

Rev	Inc	Sheet
		118
2		118.10

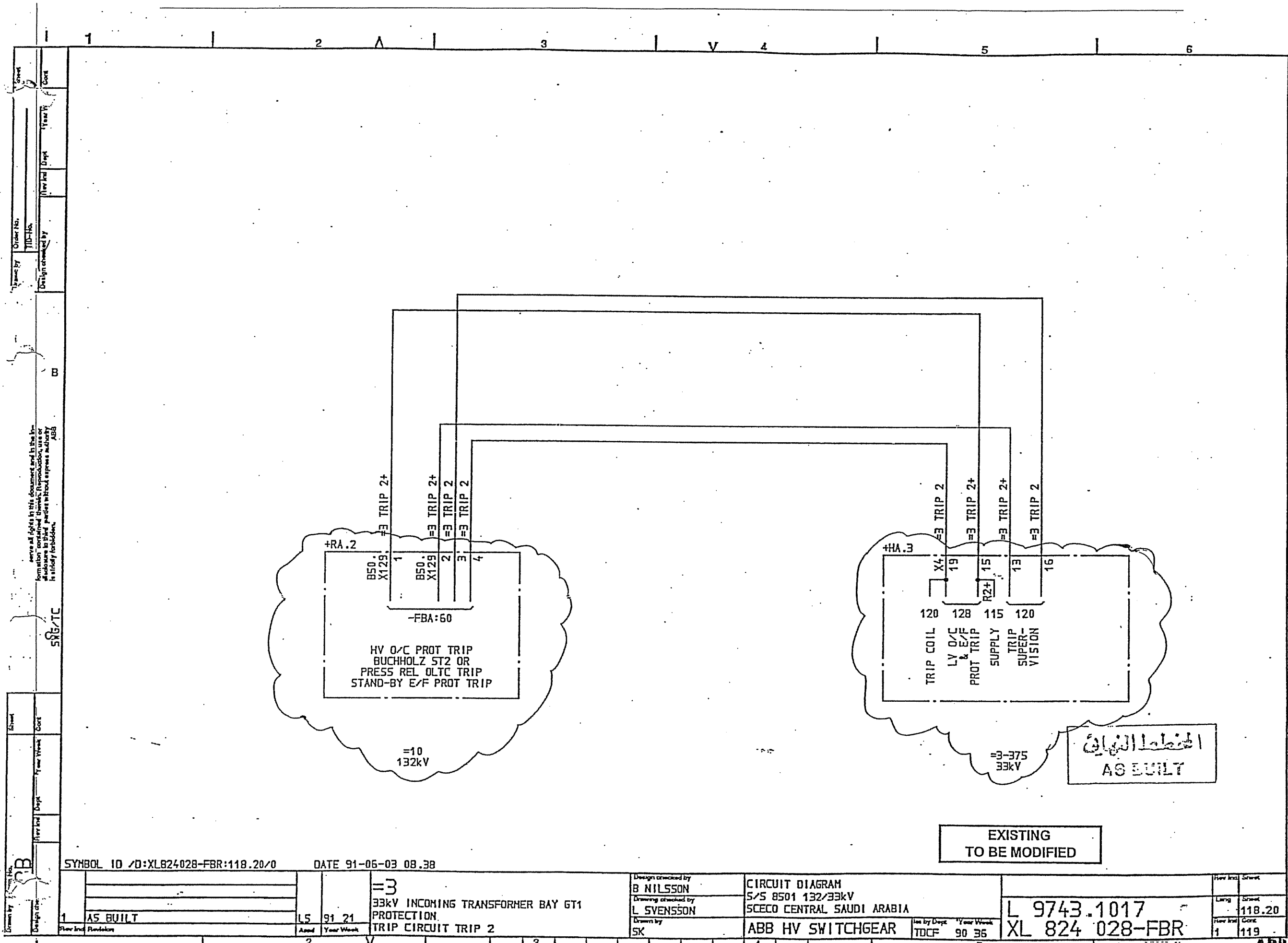




SYMBOL ID /D:XL824028-FBR:118.10/0		DATE 91-06-03 08.38		DESIGN CHECKED BY B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		L 9743.1017	
1 AS BUILT		LS 91 21		DRAWING CHECKED BY L SVENSSON		ABB HV SWITCHGEAR		XL 824 028-FBR	
1		2		SK		TDCF 90 36		1	
1		2		3		4		5	

Drawn by: [Blank]
 Design checked by: [Blank]
 Order No.: [Blank]
 Design checked by: [Blank]
 New Job Dept: [Blank]
 Year Week: [Blank]

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Design checked by: [Signature] Order No. [Blank] Design checked by: [Signature] Year Week: [Blank]

SYMBOL ID / D: XL824 028-FBR:118.20/0

AS BUILT

15 91 21

33kV INCOMING TRANSFORMER BAY GT1 PROTECTION TRIP CIRCUIT TRIP 2

Design checked by: B NILSSON

Drawing checked by: L SVENSSON

Drawn by: SK

CIRCUIT DIAGRAM

S/S 8501 132/33kV

SCECO CENTRAL SAUDI ARABIA

ABB HV SWITCHGEAR

Iss by Date: TOCF 90 36

Year Week: 90 36

L 9743.1017

XL 824 028-FBR

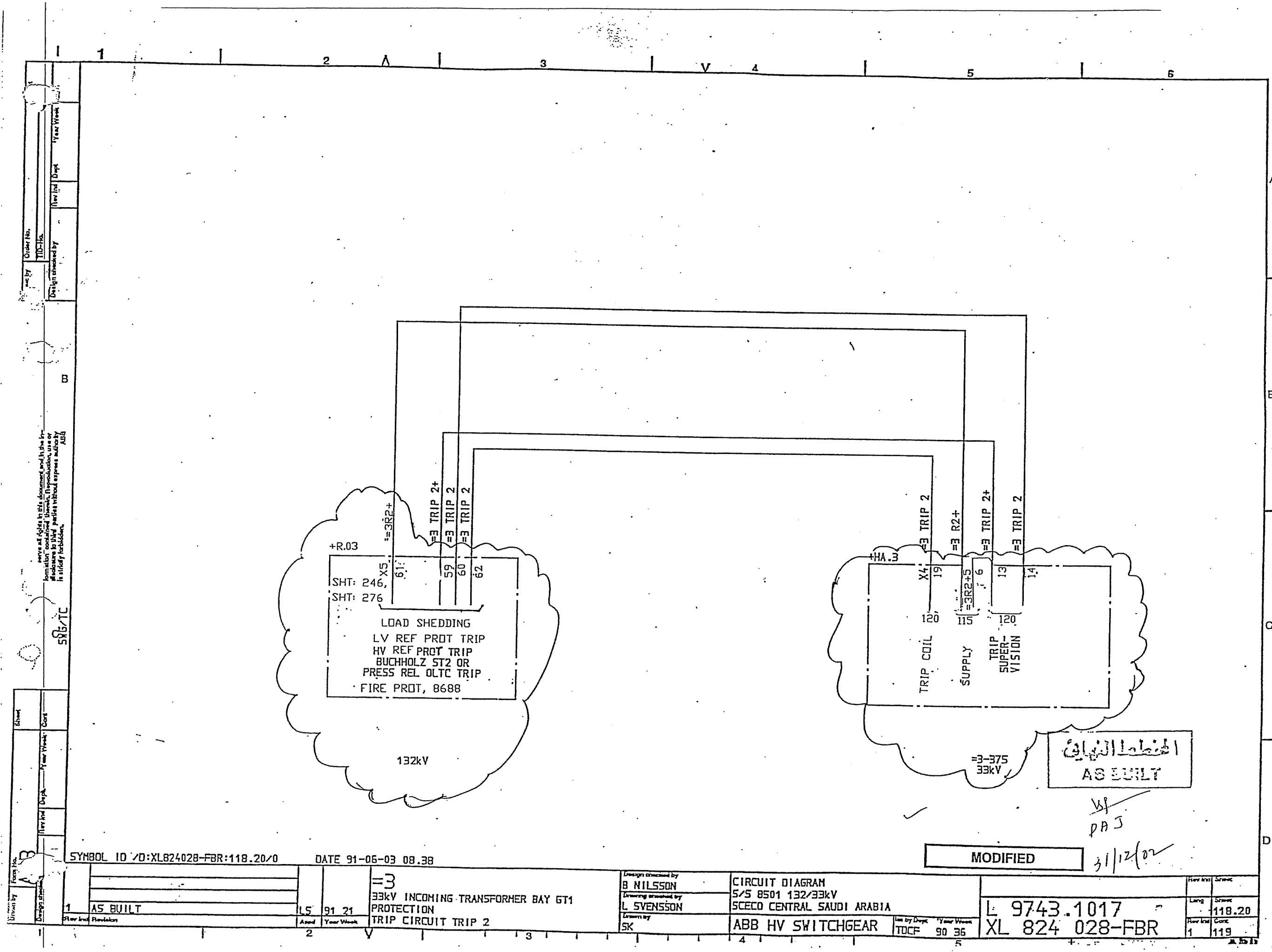
How Incl: Sheet

Long: 118.20

How Incl: Cont: 119

المخطط الكهربائي
AS BUILT

EXISTING
TO BE MODIFIED



Order No. TID-110
Design checked by
Year Week
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2 20 91 21

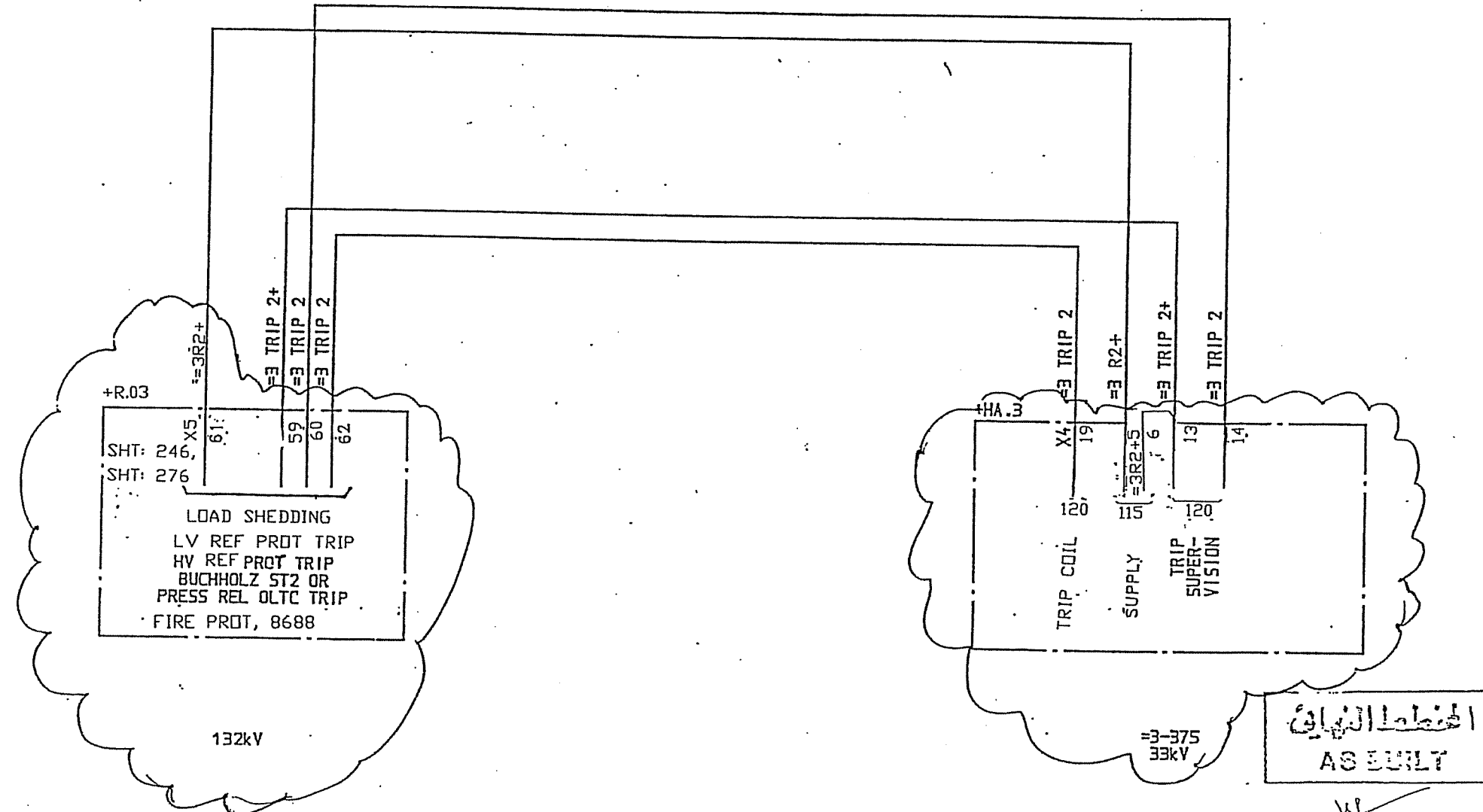
SYMBOL ID 70:XL824028-FBR:118.20/0
DATE 91-06-03 08.38

1 AS BUILT
2

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

Year Week
90 36

1 15 91 21
2 20 91 21

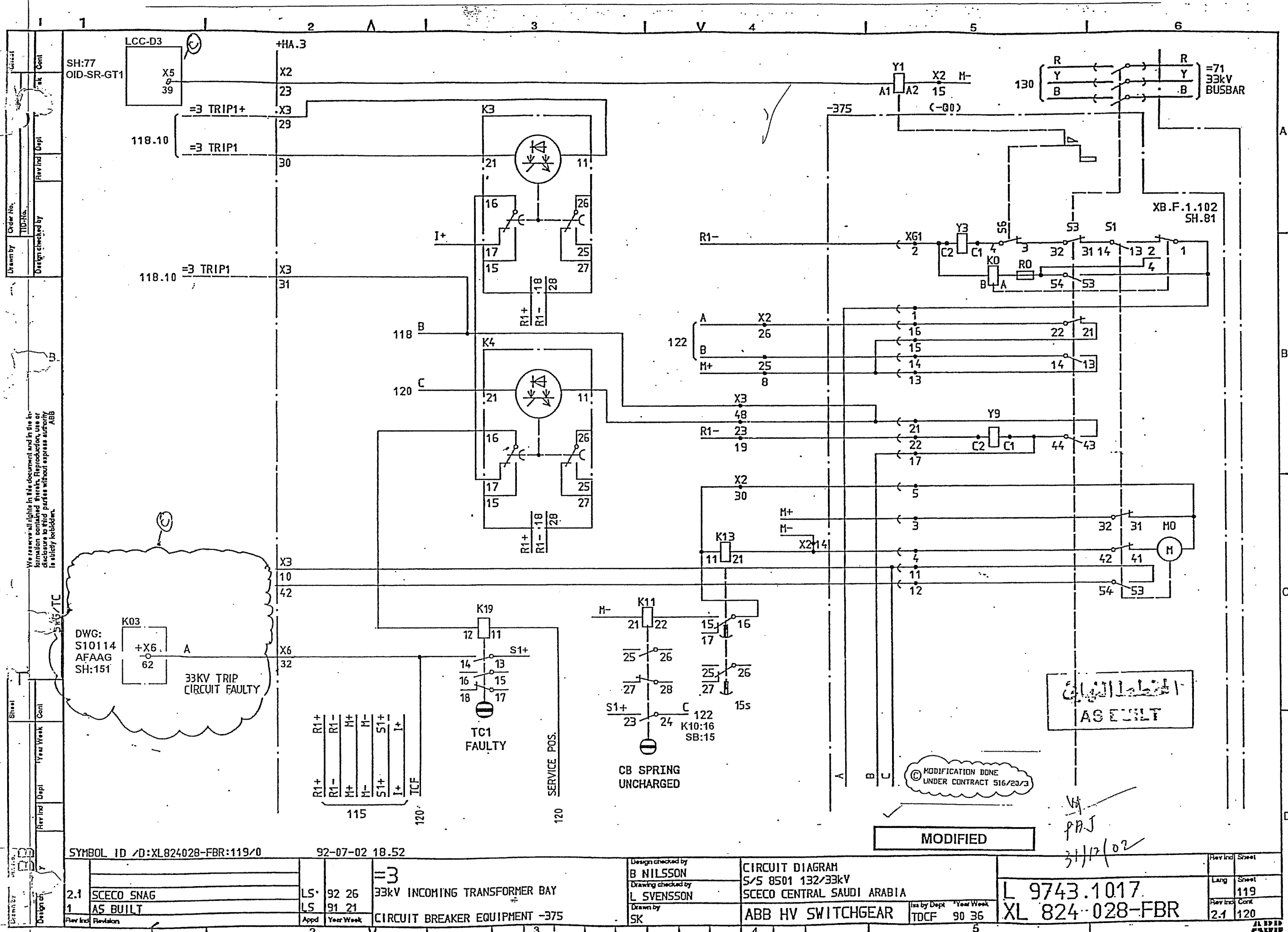


الخطة النهائية
AS BUILT

31/12/02

MODIFIED

CIRCUIT DIAGRAM	Rev	Int	Drawn
S/S 8501 132/33kV	1	118.20	
SCECO CENTRAL SAUDI ARABIA	1	119	
ABB HV SWITCHGEAR	1	119	



SYMBOL ID /D:XL824028-FBR:119/0

92-07-02 18.52

2.1 SCECO SNAG
1 AS BUILT

LS 92 26
LS 91 21

33kV INCOMING TRANSFORMER BAY
CIRCUIT BREAKER EQUIPMENT -375

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

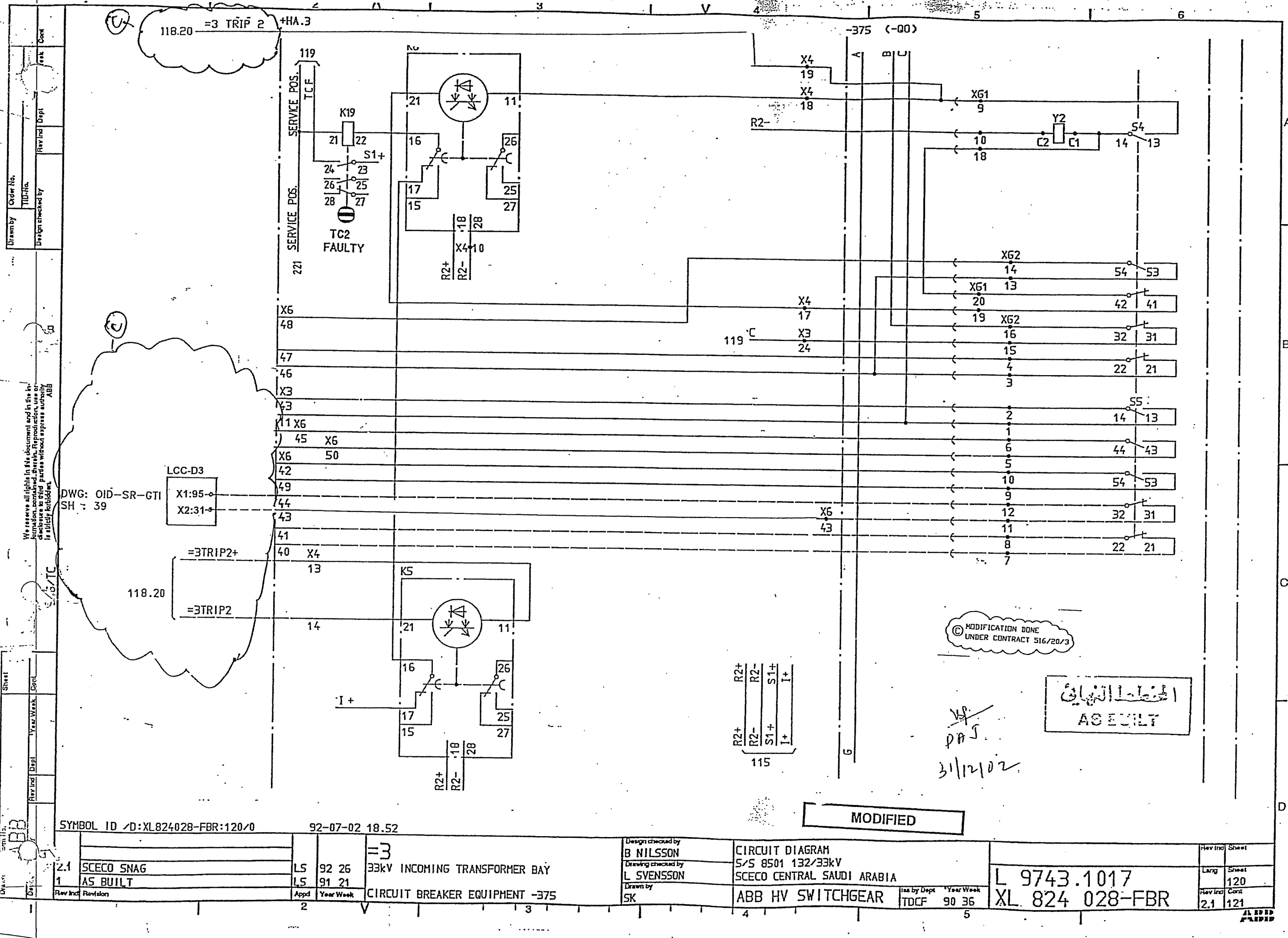
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

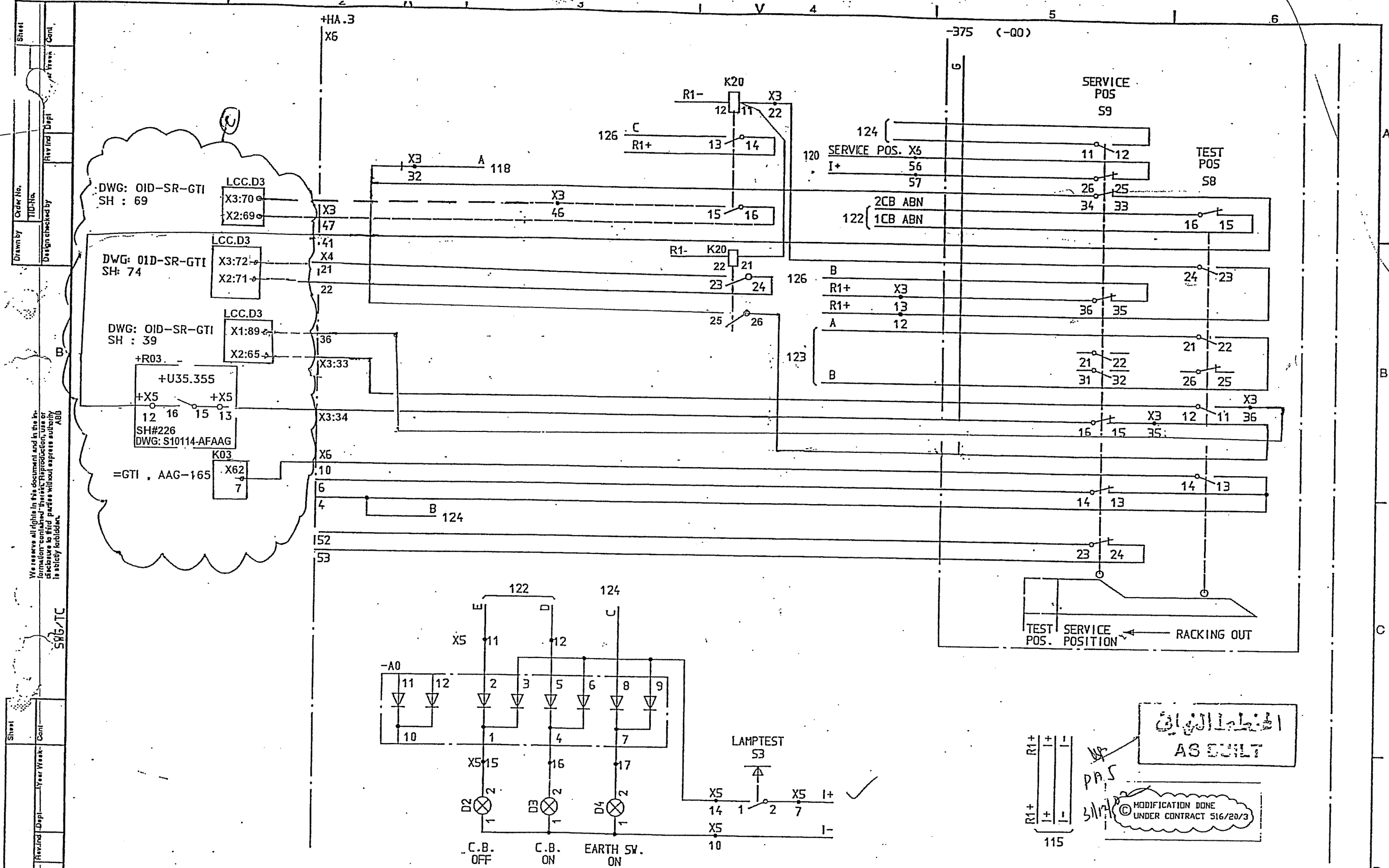
Iss by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824-028-FBR

Rev Ind Sheet
Lang Sheet
Rev Ind Cont
2.1 119
2.1 120

AS BUILT



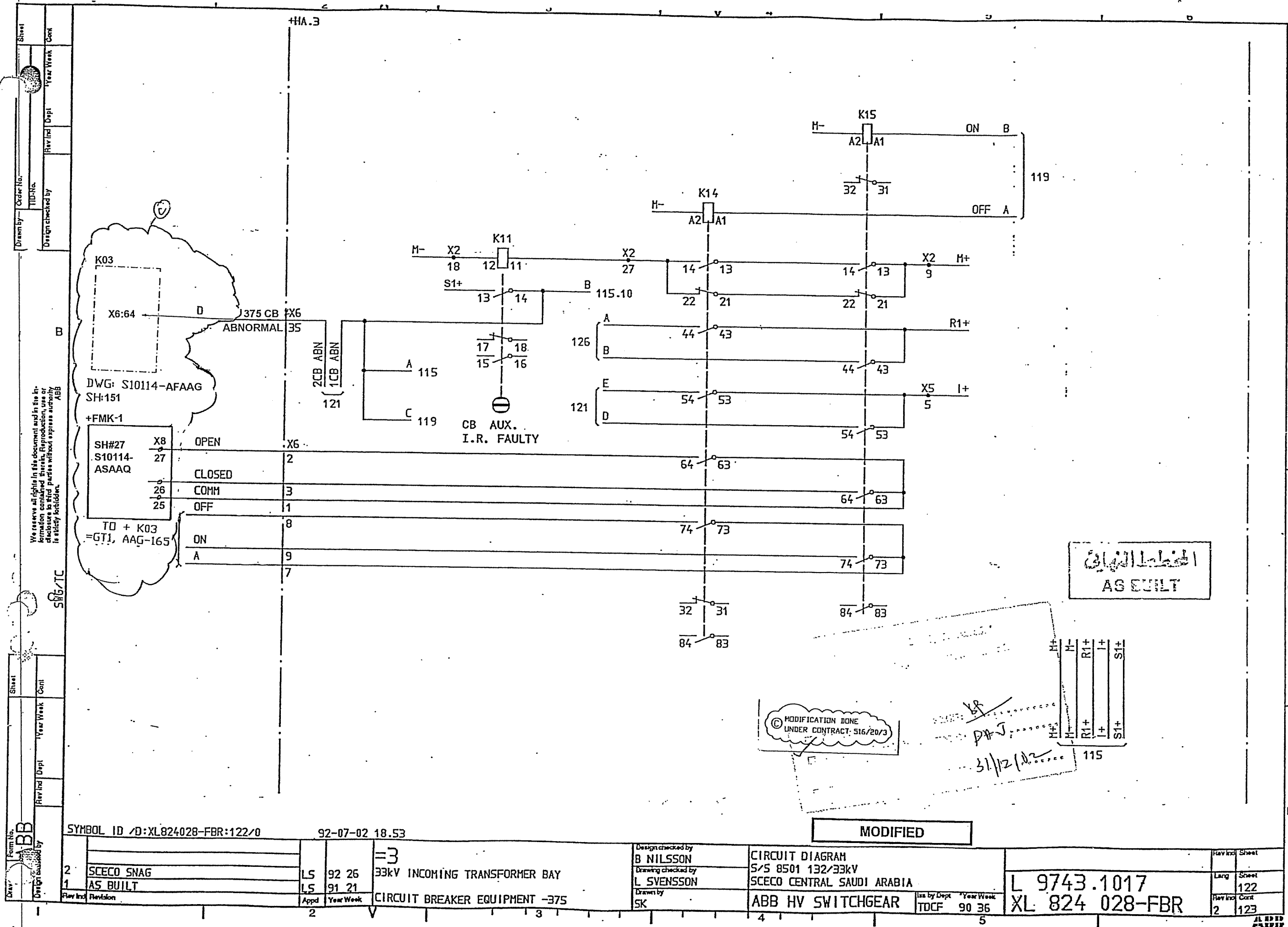


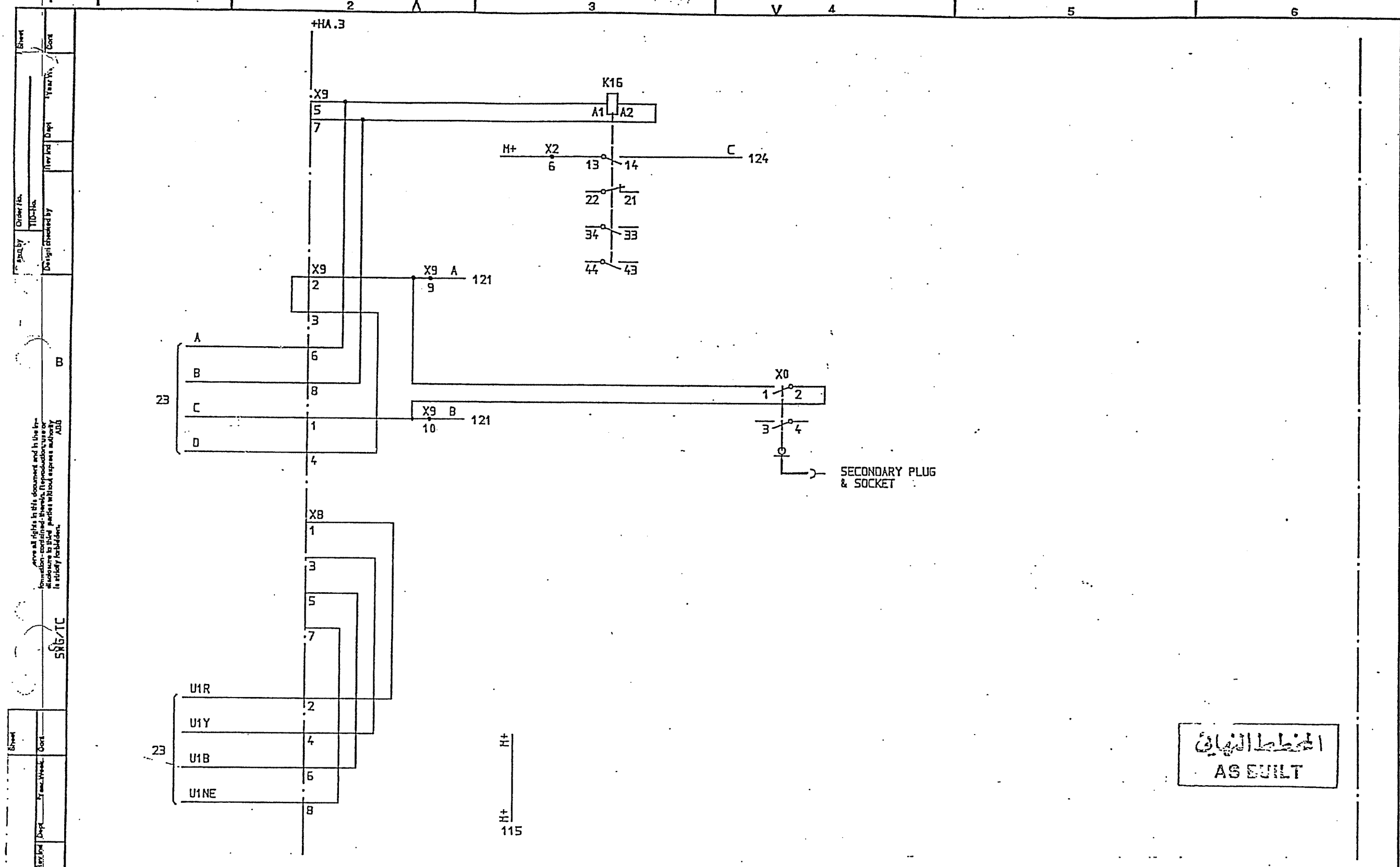
SYMBOL ID /D:XL824028-FBR:121/0		92-07-02 18.53		=3		33kV INCOMING TRANSFORMER BAY		CIRCUIT BREAKER EQUIPMENT -375		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		XL 824 028-FBR	
2.1	SCECO SNAG	LS	92 26	1	AS BUILT	LS	91 21	Appd	Year Week	Design checked by	B NILSSON	Iss by Dept	Year Week	TOCF	90 36	Long	Sheet	Rev Ind	Cont
1	AS BUILT	LS	91 21	Appd	Year Week	SK				Drawn by	L SVENSSON						121		
																	122		

الخطا المثلث
AS BUILT

MODIFICATION DONE
UNDER CONTRACT 516/20/3

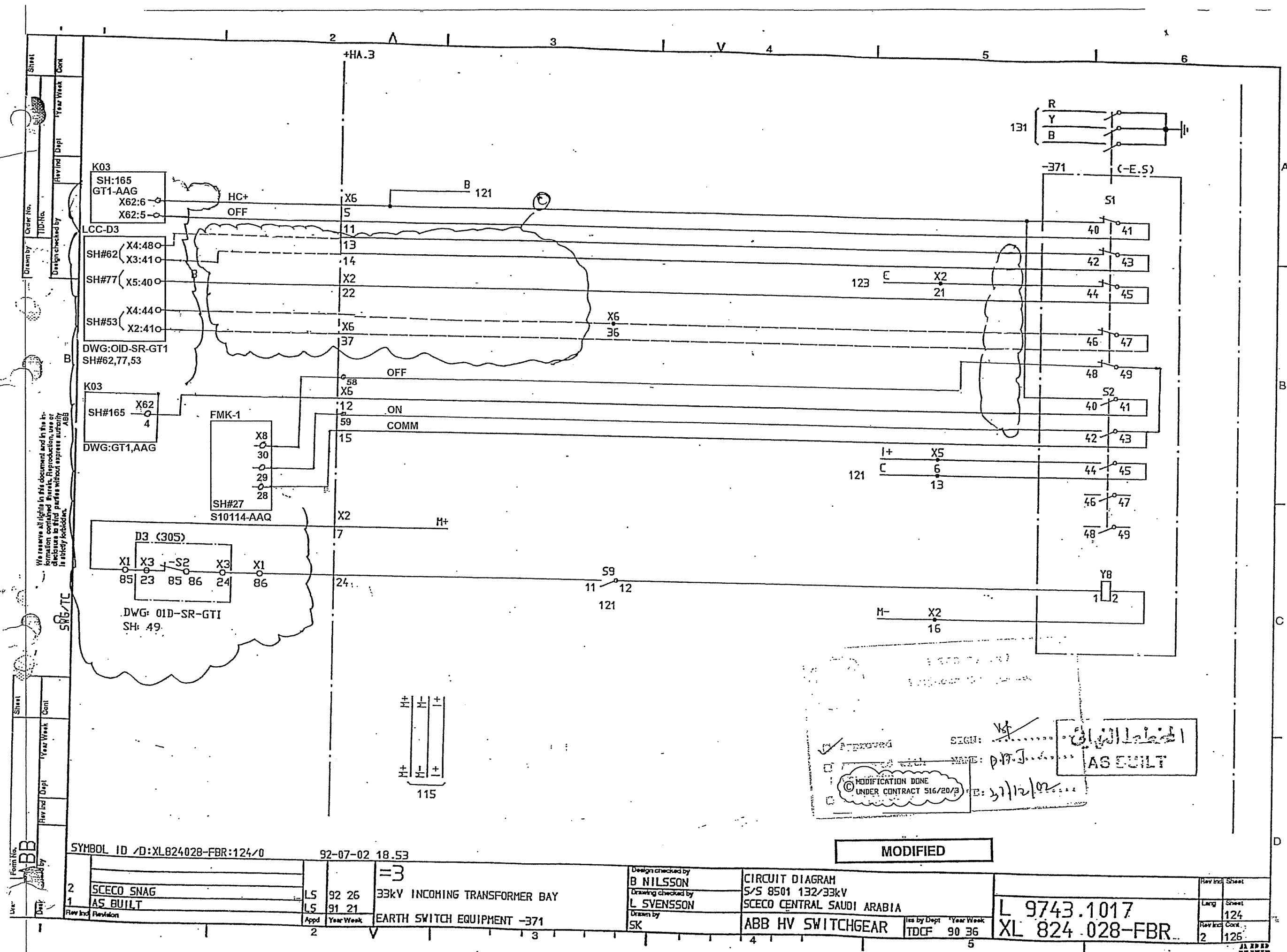
MODIFIED

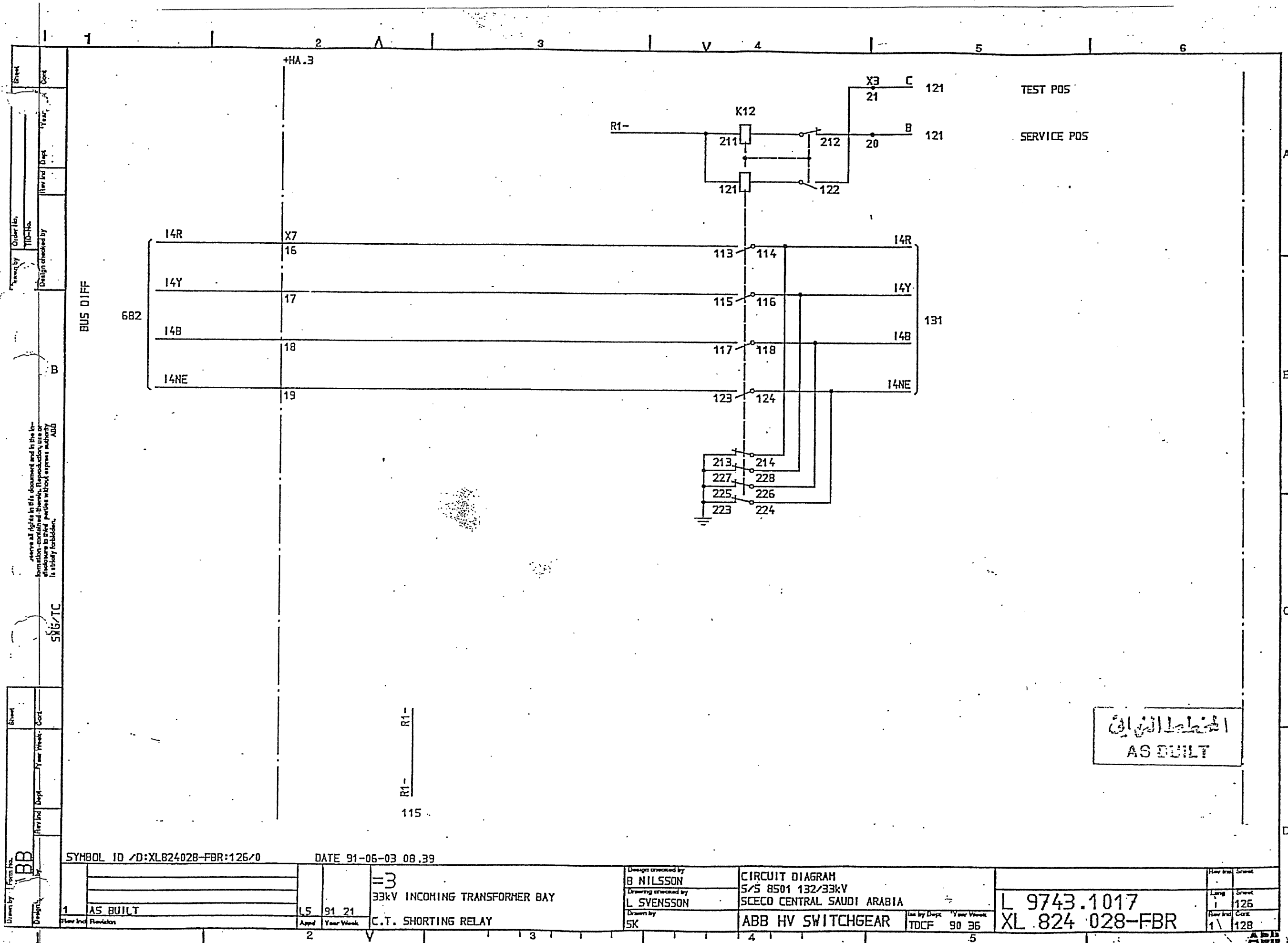




الخطة النهائية
AS BUILT

SYMBOL ID: XL824028-FBR:123/0		DATE 91-06-03 08.39		CIRCUIT DIAGRAM		L 9743.1017	
AS BUILT		33kV INCOMING TRANSFORMER BAY		S/S 8501 132/33kV		XL 824 028-FBR	
INTERLOCKING RELAY FOR C.B. TRUCK		ABB HV SWITCHGEAR		SKECO CENTRAL SAUDI ARABIA		1	
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9		10		11		12	
13		14		15		16	
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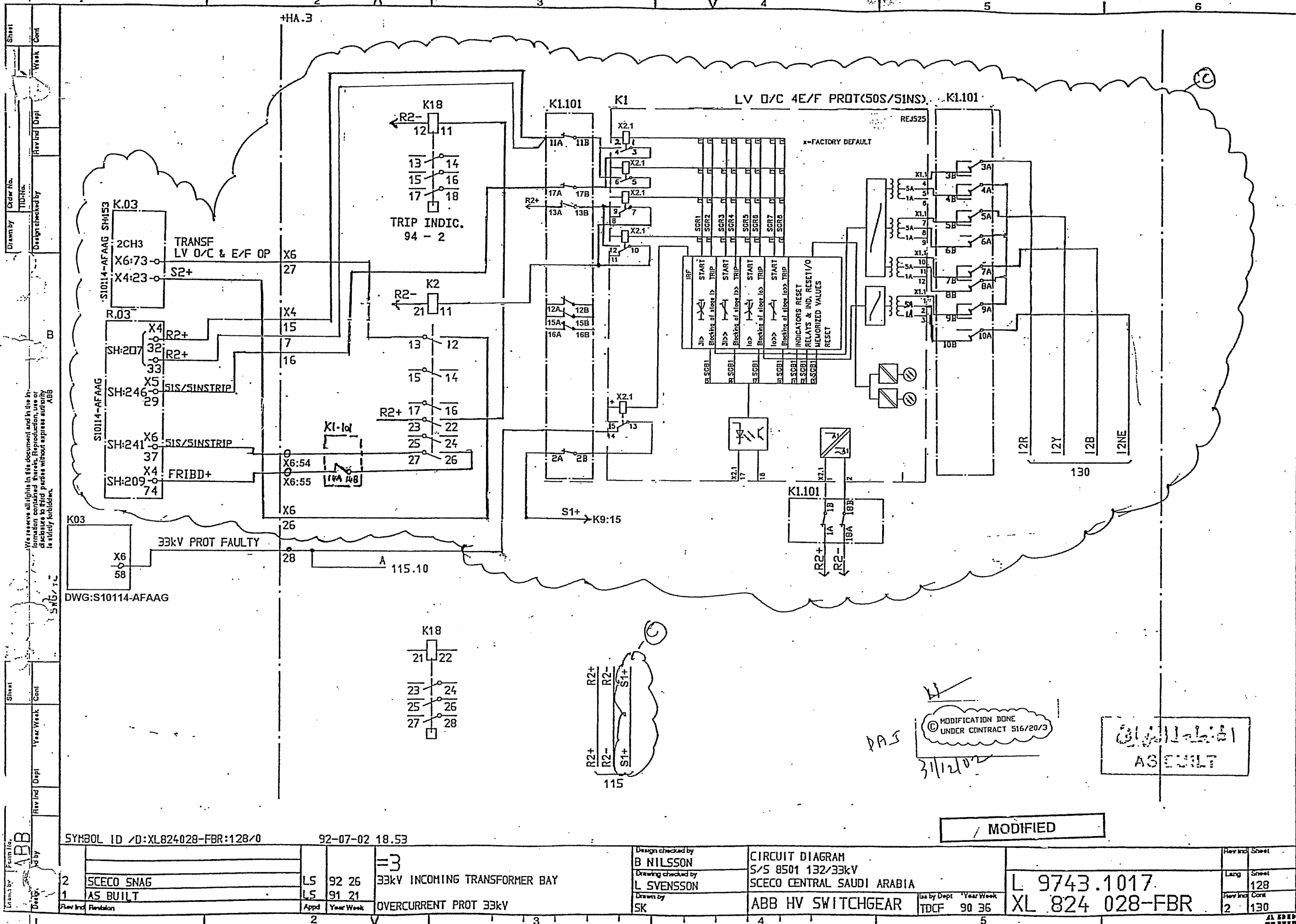


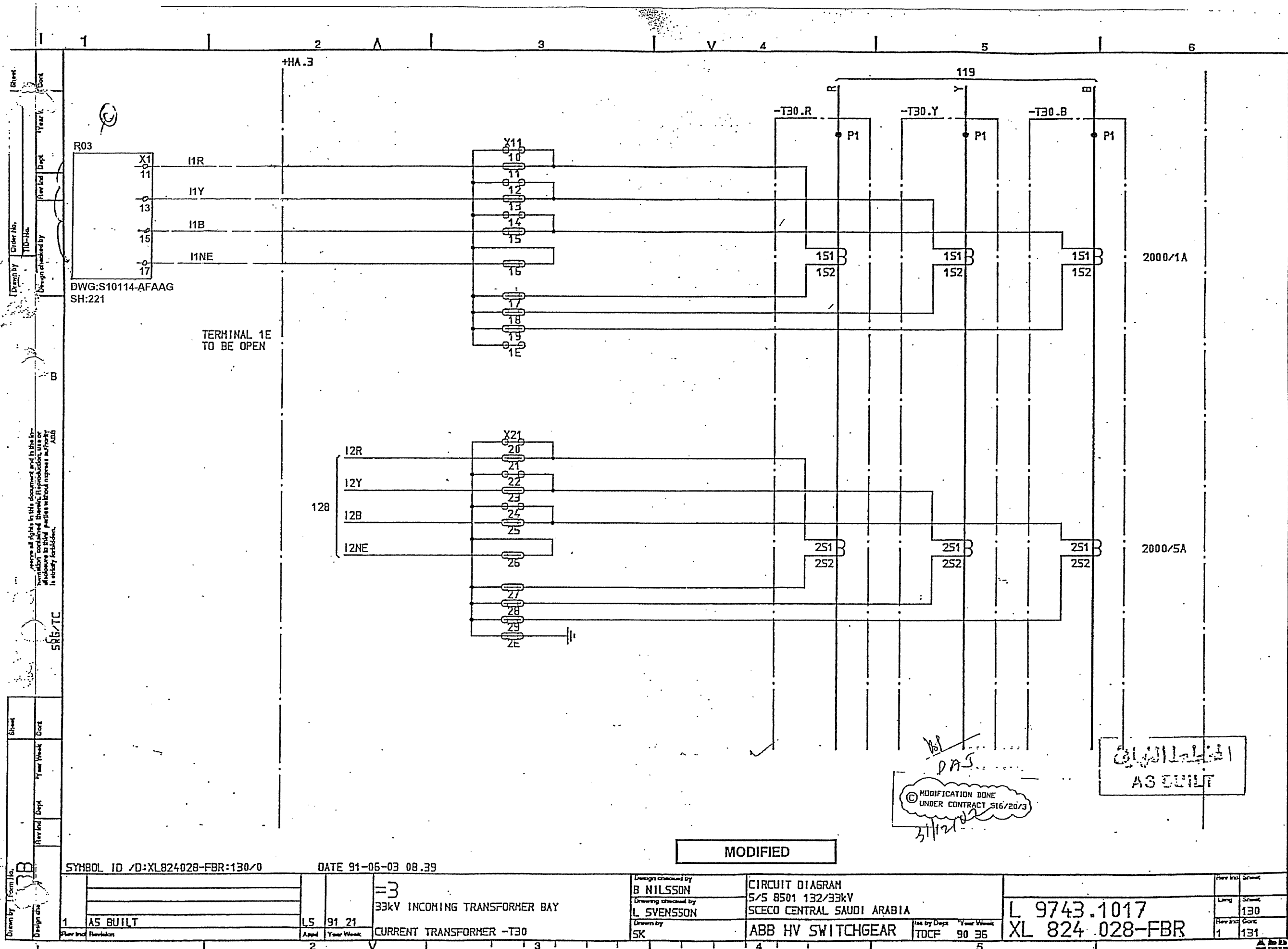
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AS BUILT

SYMBOL ID /D:XL824028-FBR:126/0 DATE 91-06-03 08.39

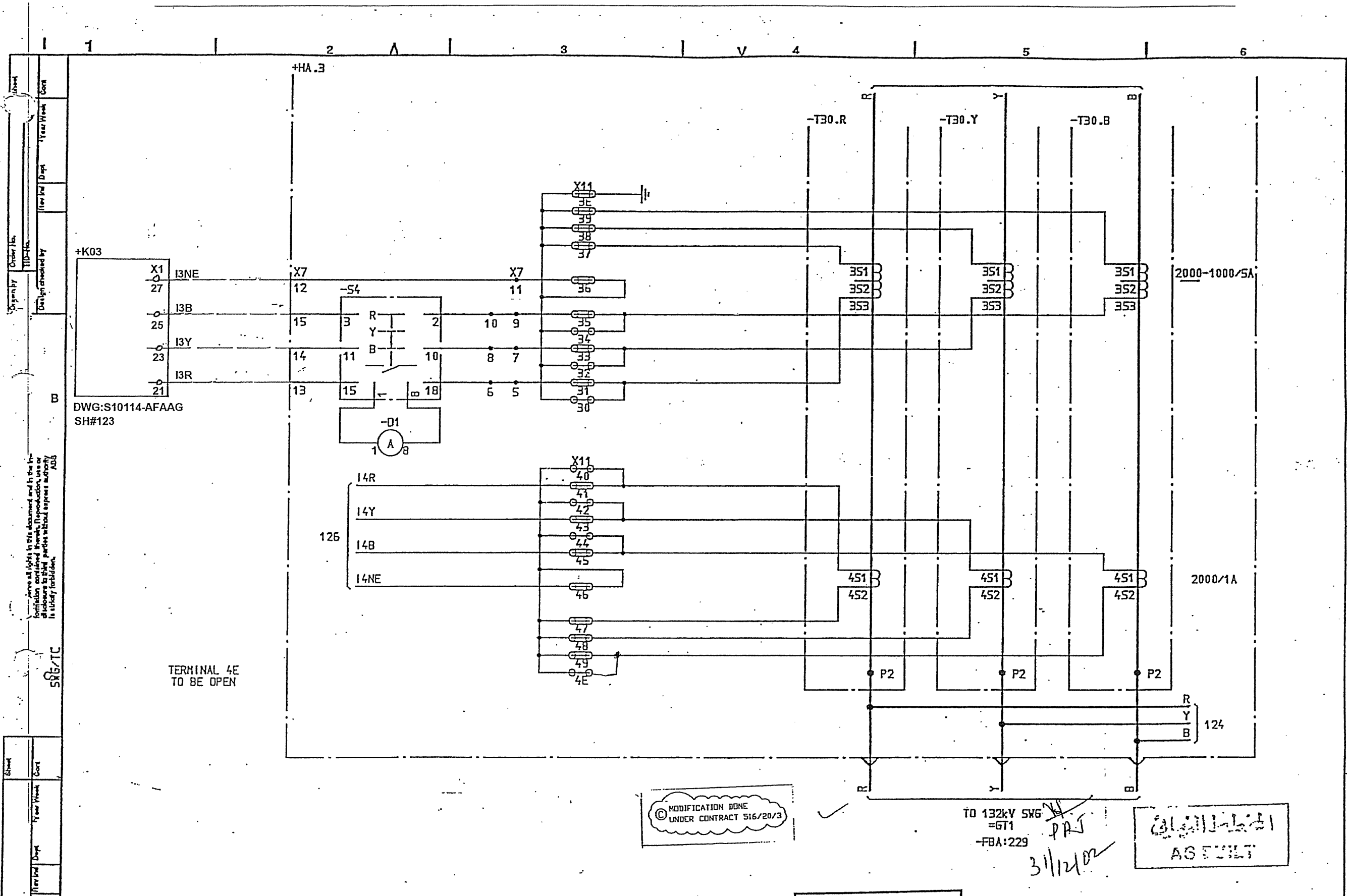
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2												1	126

ABB





Drawn by	Form No.	Sheet	Order No.	Year Week	Cont
Design checked by	Rev Ind	Dept	Year Week	Cont	
Rev Ind	Revision	Appd	Year Week	Cont	
1	AS BUILT	L5	91 21		
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SYMBOL ID /D:XL824028-FBR:131/0		DATE 91-06-03 08.39		MODIFIED	
1	AS BUILT	LS	91 21	Design checked by B NILSSON	CIRCUIT DIAGRAM
2		Appd	Year Week	Drawing checked by L SVENSSON	S/S 8501 132/33kV
3				Drawn by SK	SCECO CENTRAL SAUDI ARABIA
4					ABB HV SWITCHGEAR
5					See by Dept Year Week TDCF 90 36
6					L 9743.1017
					XL 824 028-FBR
					Rev and Sheet 1 131
					Rev and Sheet 1 135

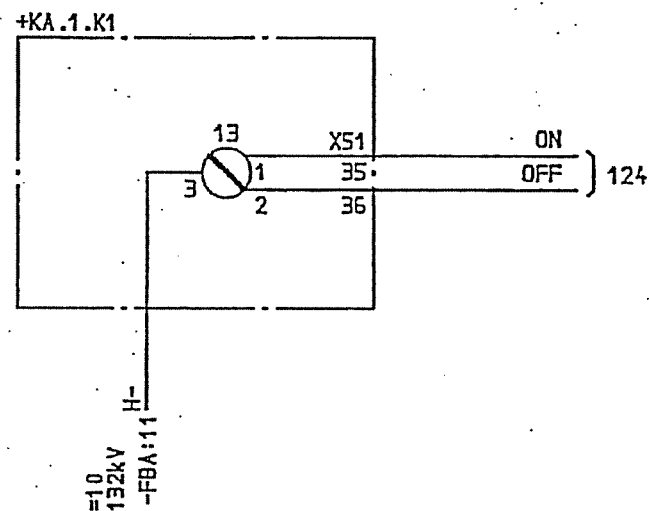
Order No.	Drawn by	Design checked by	Rev	Ind	Dept	Year	Week	Cont
715-12								

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Sheet	Cont

Drawn by	Design checked by	Rev	Ind	Dept	Year	Week	Cont



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SYMBOL ID /D:XL824028-FBR:135/0

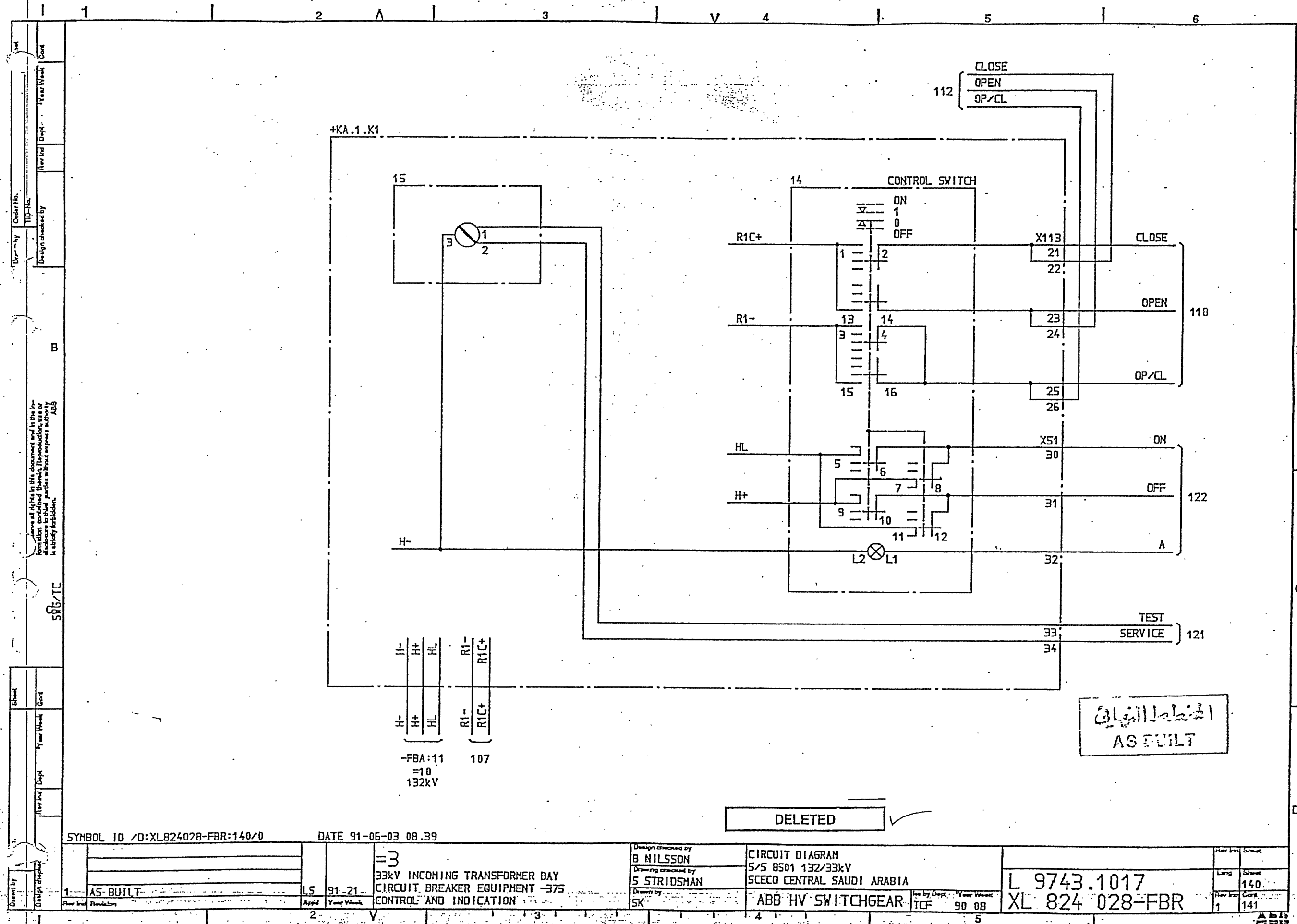
DATE 91-06-03 08.39

1	AS-BUILT	LS	91.21	=3	33kV INCOMING TRANSFORMER BAY EARTH SWITCH EQUIPMENT -371 INDICATION	Design checked by B NILSSON	CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA	Rev	Ind	Dept	Year	Week	Cont
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						Drawn by SK	ABB HV SWITCHGEAR	Rev	Ind	Dept	Year	Week	Cont
							TCF 90 08						

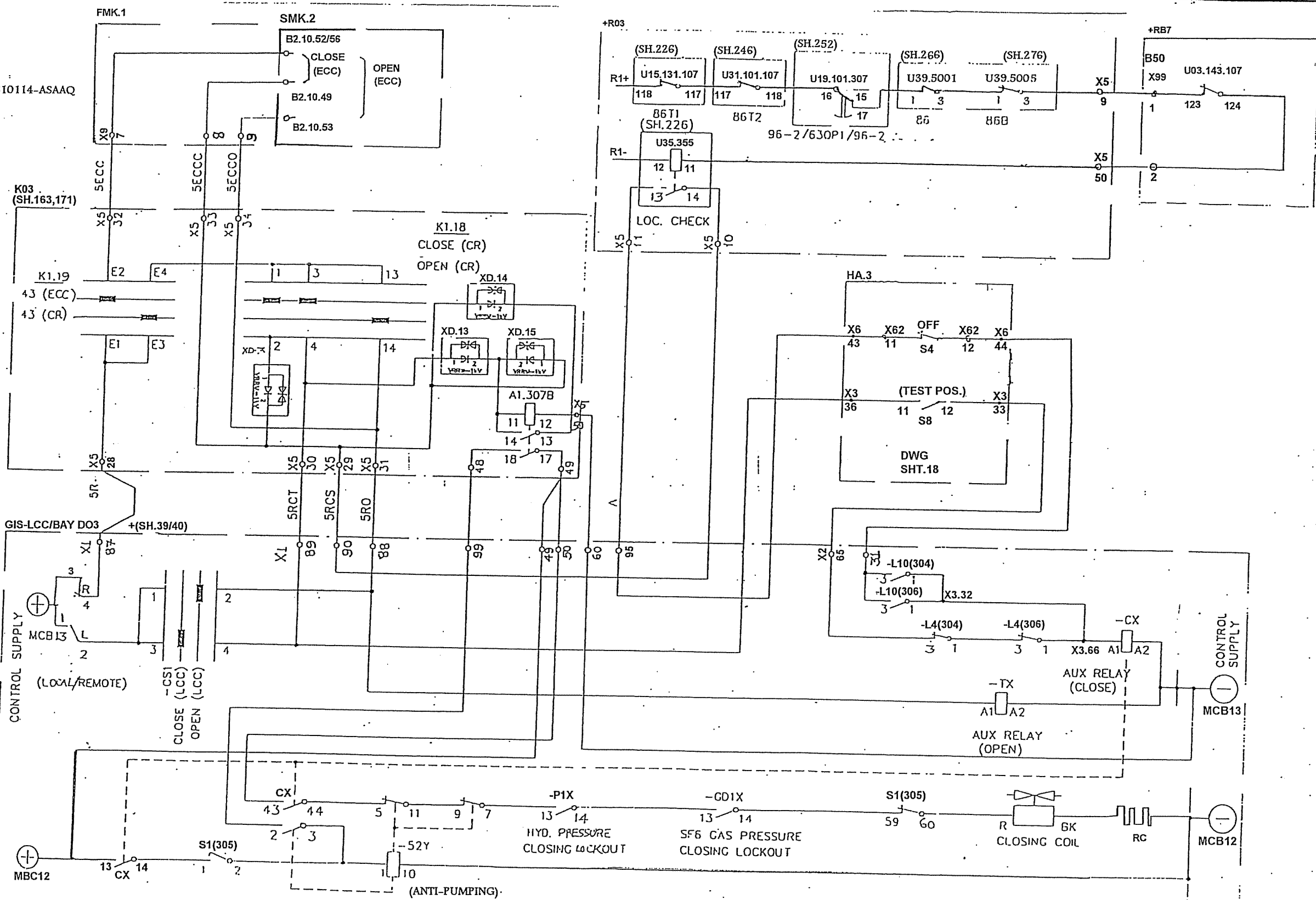
L 9743.1017
 XL 824 028-FBR

Rev	Ind	Dept	Year	Week	Cont

ABD



DWG: S10114-ASAAQ
SH:27

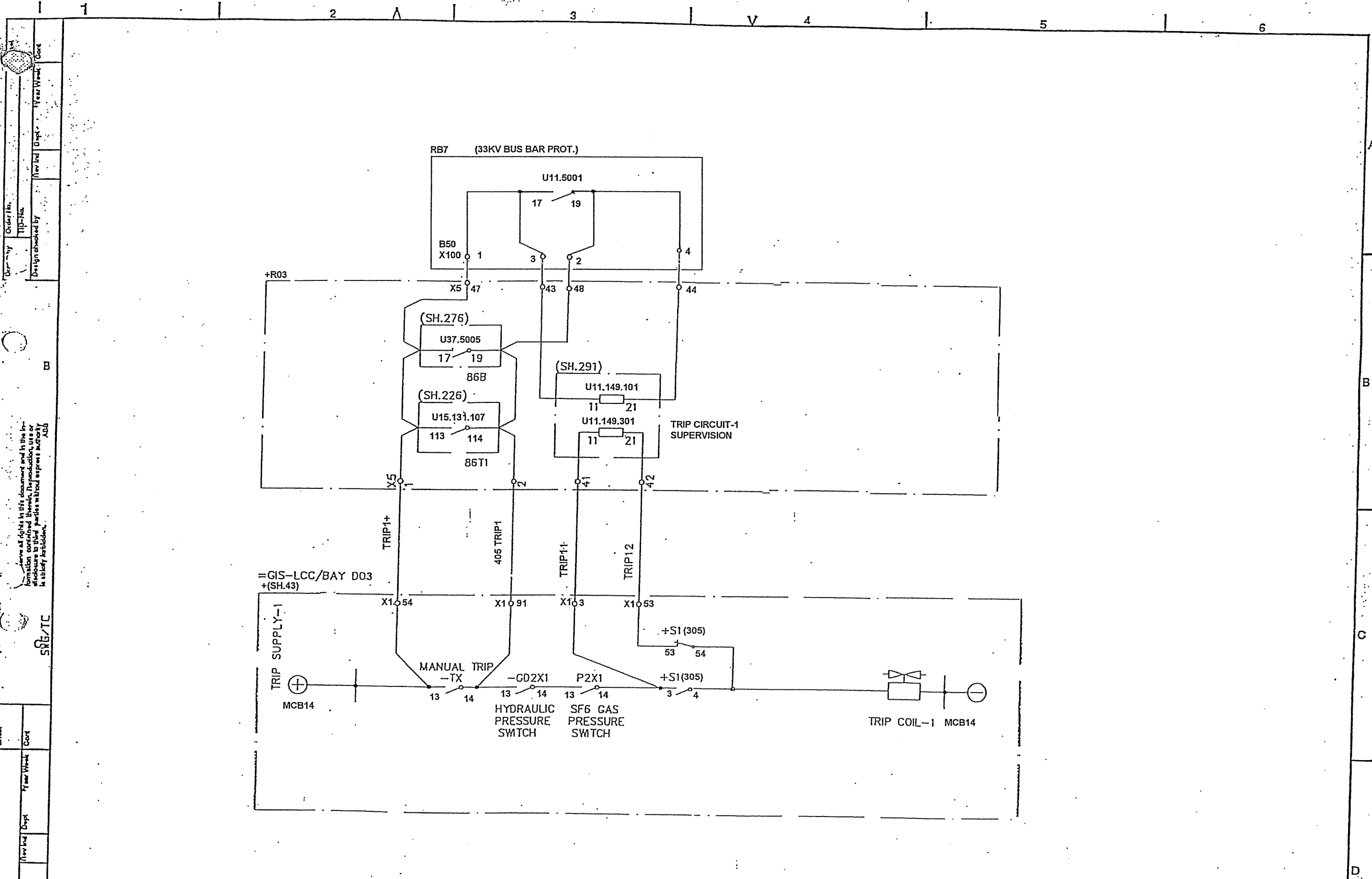


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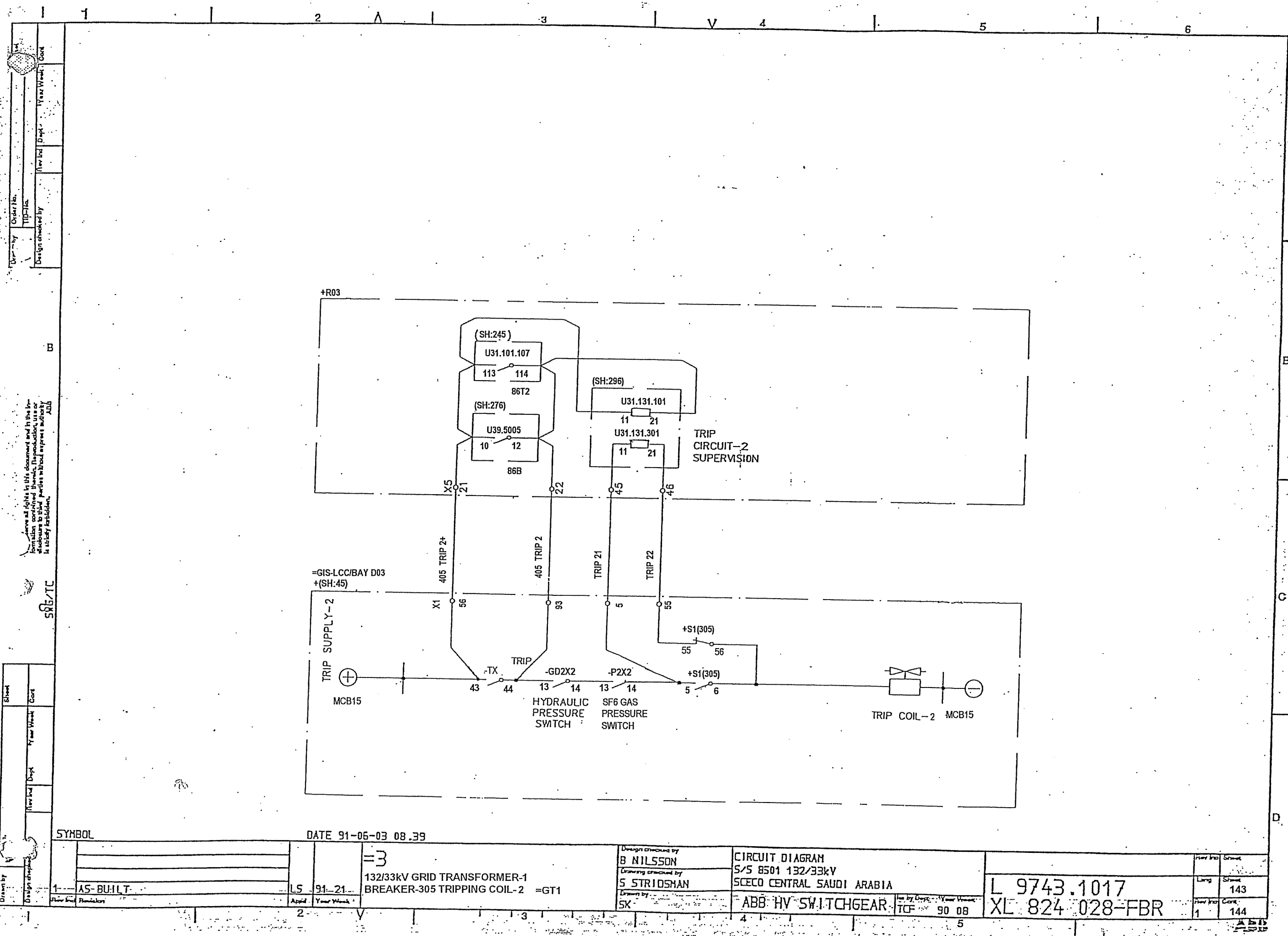
DATE 91-06-03 08.39

<p>AS-BUILT</p>	<p>132/33kV GRID TRANSFORMER 132kV CB.305 CLOSING CIRCUIT =GT1</p>	<p>Design checked by B NILSSON Drawing checked by S STRIDSMAN Drawn by SK</p>	<p>CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA ABB HV SWITCHGEAR</p>	<p>L 9743.1017 XL 824 028-FBR</p>
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Rev	Int	Sheet
1	1	141
1	1	142



SYMBOL		DATE 91-05-03 08.39		=3		132/33kV GRID TRANSFORMER-1		BREAKER-305 TRIPPING COIL-1 =GT1		Design checked by B NILSSON		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		Rev Int. Sheet	
1		AS-BUILT		LS		91-21				Drawing checked by S STRIDSHAN		ABB HV SWITCHGEAR		TCF 90 08		L 9743.1017		Lang Sheet	
																XL 824 028-FBR		Rev Int. Sheet	
																		1 142	
																		1 143	



SYMBOL

DATE 91-06-03 08.39

=3

132/33KV GRID TRANSFORMER-1
BREAKER-305 TRIPPING COIL-2 =GT1

Design checked by

B NILSSON

Drawing checked by

S STRIDSMAN

Drawn by

SK

CIRCUIT DIAGRAM

S/S 8501 132/33kV

SCECO CENTRAL SAUDI ARABIA

ABB HV SWITCHGEAR

TCF 90 08

L 9743.1017

XL 824 028-FBR

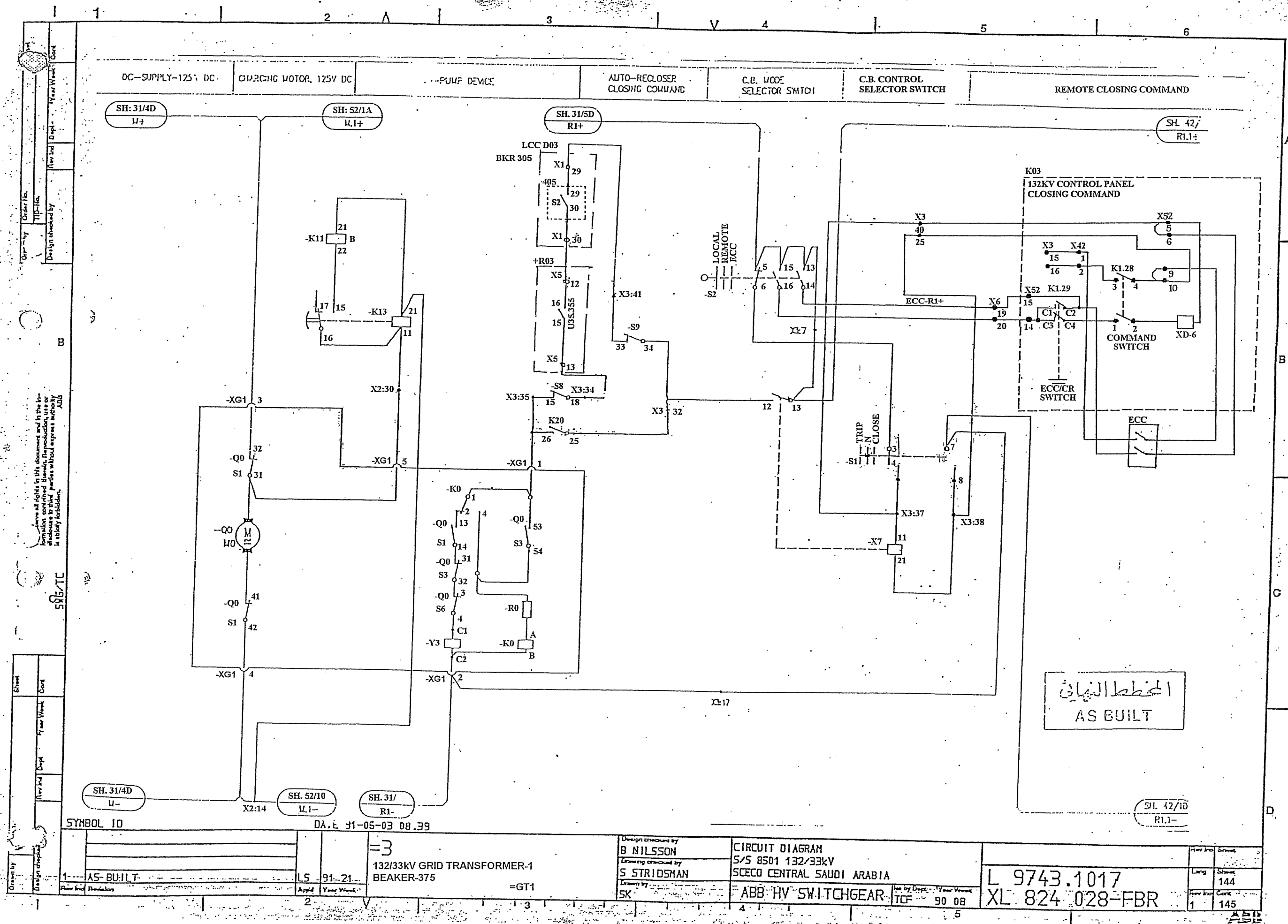
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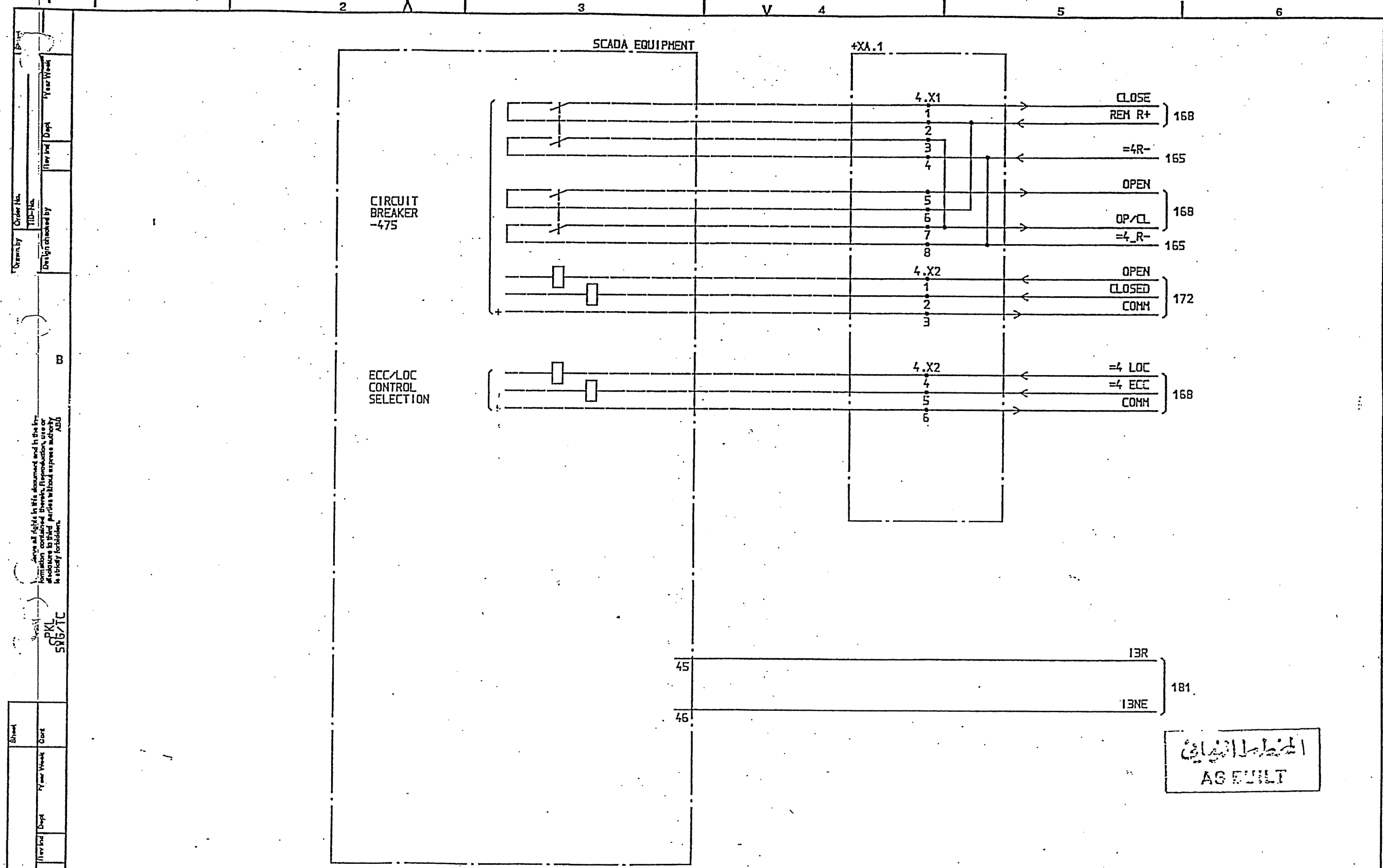
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143

Rev No

144

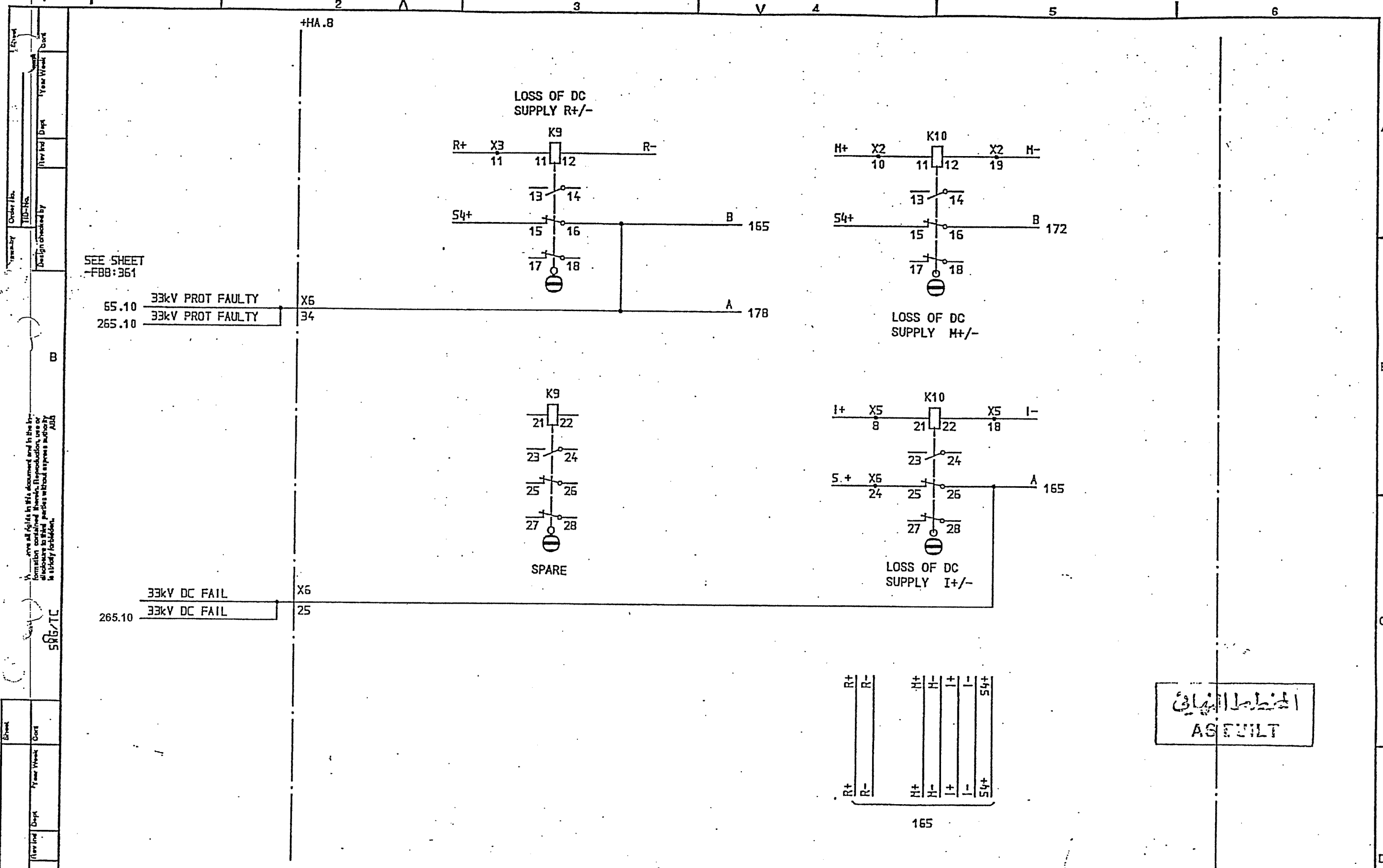




SYMBOL ID /D:XL824028-FBR:162/0		DATE 91-06-03 08.39		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev Ind Sheet	
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				Drawn by PN		SCECO CENTRAL SAUDI ARABIA		Rev Ind Cont	
1 AS BUILT		15 91 21		SCADA INTERFACE EQUIPMENT		ABB HV SWITCHGEAR		1 165	
Rev Ind Revision		Appd Year Week		Rev Ind Revision		Rev Ind Revision		Rev Ind Revision	
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الجهاز الكهربائي
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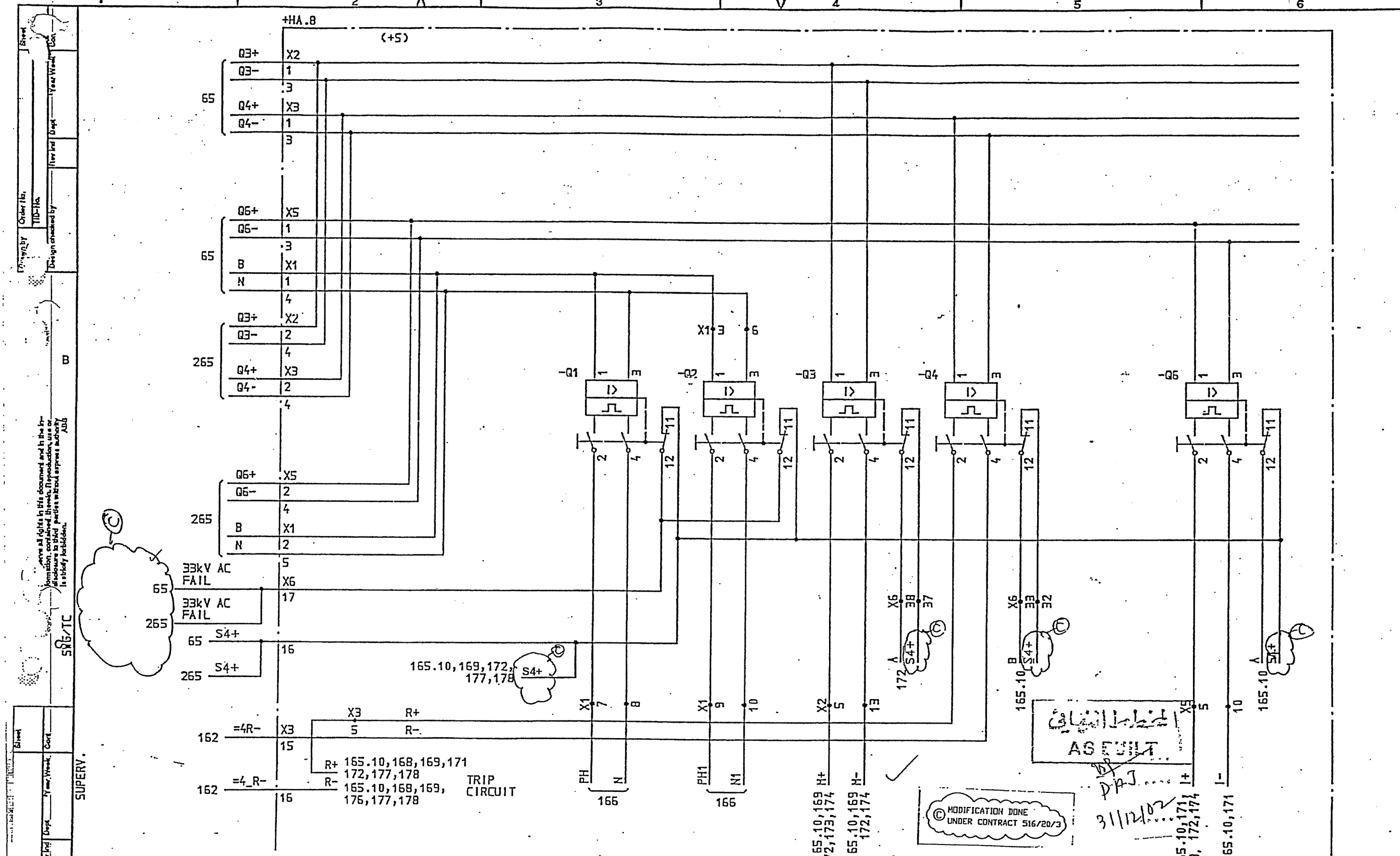
L 9743.1017
XL 824 028-FBR



الخطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:165.10/0		DATE 91-06-03 08.40		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		Rev Int Sheet	
=4 33/13,8kV TRANSFORMER BAY T12		Drawing checked by L SVENSSON		Drawn by PN		L 9743.1017 XL 824 028-FBR		Lang Sheet 165.10	
AS BUILT		LS 91 21		DC AUX. VOLTAGE SUPPLY		ABB HV SWITCHGEAR		Rev Int Sheet 165	
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ABB



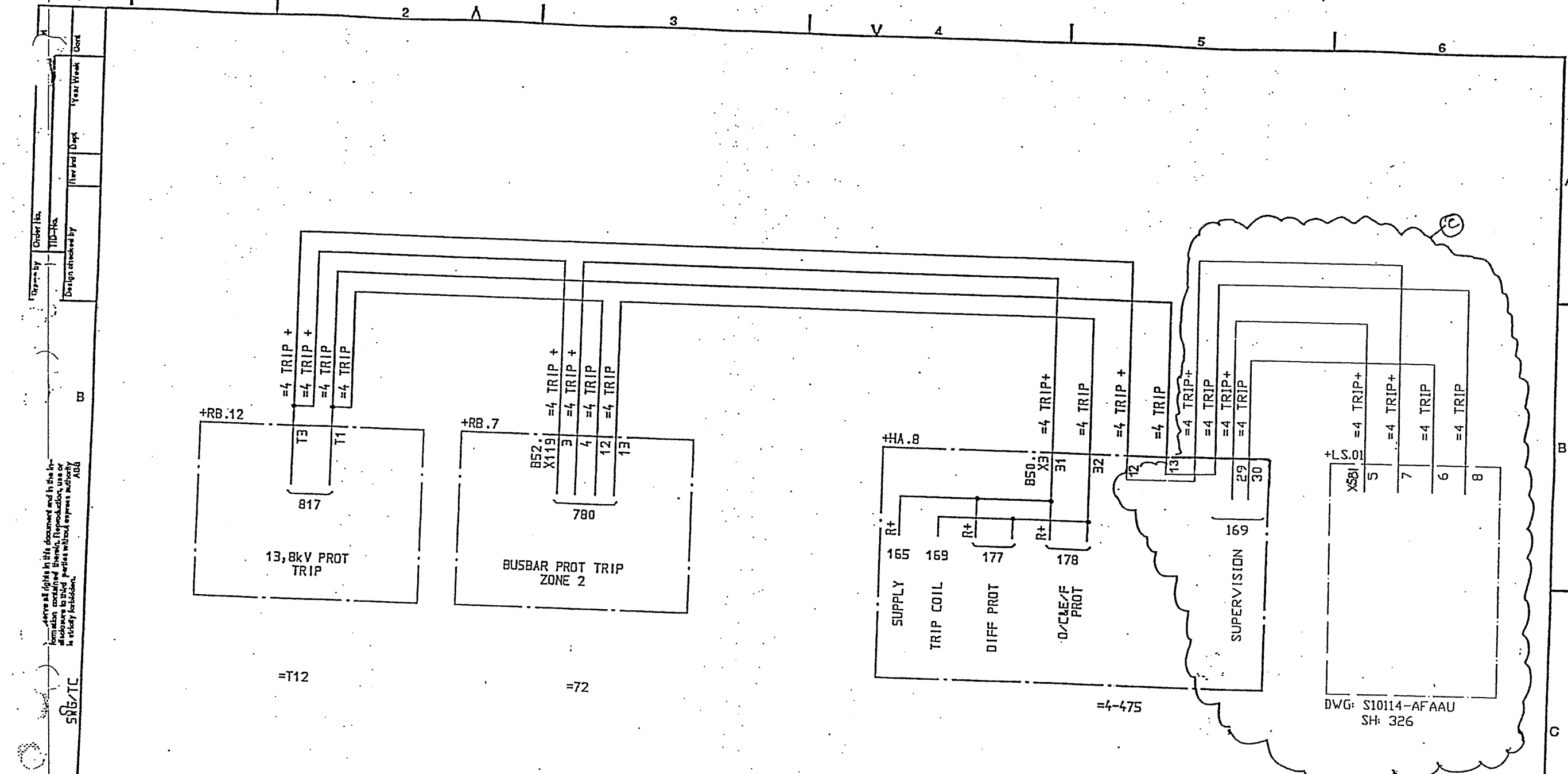
SYMBOL ID /D:XL824028-FBR:165/0		DATE 91-06-03 08.39		LIGHTING PANEL		HEATING PANEL		MOTOR SUPPLY		MODIFIED		INDICATION	
2	AS BUILT	L5	91 21	=4		33/13,8kV TRANSFORMER BAY T12		DC AUX. VOLTAGE SUPPLY		Design checked by B NILSSON		CIRCUIT DIAGRAM	
										Drawing checked by L SVENSSON		S/S 8501 132/33kV	
										Drawn by PN		SCCO CENTRAL SAUDI ARABIA	
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												L 9743.1017	
												XL 824 028-FBR	
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MODIFICATION DONE
UNDER CONTRACT 516/20/3

AS BUILT

31/12/02

ABB



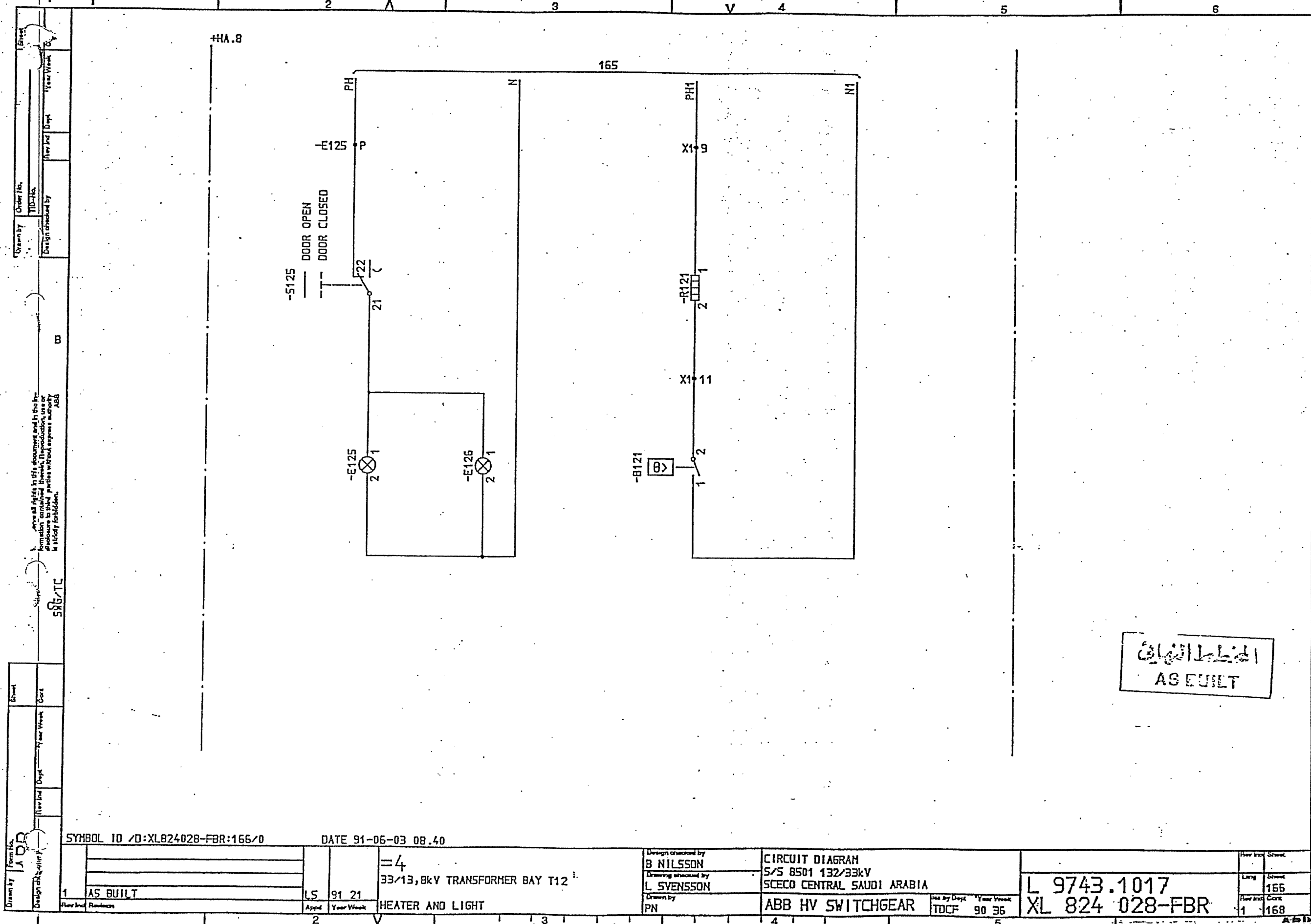
DWG: S10114-AFAAU
SH: 326

المخطط النهائي
AS BUILT

✓ P.A.S.
© MODIFICATION DONE
UNDER CONTRACT 516/20/3
31/12/02

SYMBOL ID /D:XL824028-FBR:169.10/0				DATE 91-06-03 08.40			
1 AS BUILT				=4			
LS 91 21				33/13.8kV TRANSFORMER BAY T12 :			
2				PROTECTION			
				TRIP CIRCUIT			
Design checked by B NILSSON				CIRCUIT DIAGRAM			
Drawing checked by L SVENSSON				S/S 8501 132/33kV			
Drawn by PN				SCECO CENTRAL SAUDI ARABIA			
				ABB HV SWITCHGEAR			
				L 9743.1017			
				XL 824 028-FBR			
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				168.10			
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ABB



المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:166/0

DATE 91-06-03 08.40

AS BUILT

LS 91 21

=4
33/13.8kV TRANSFORMER BAY T12
HEATER AND LIGHT

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
PN

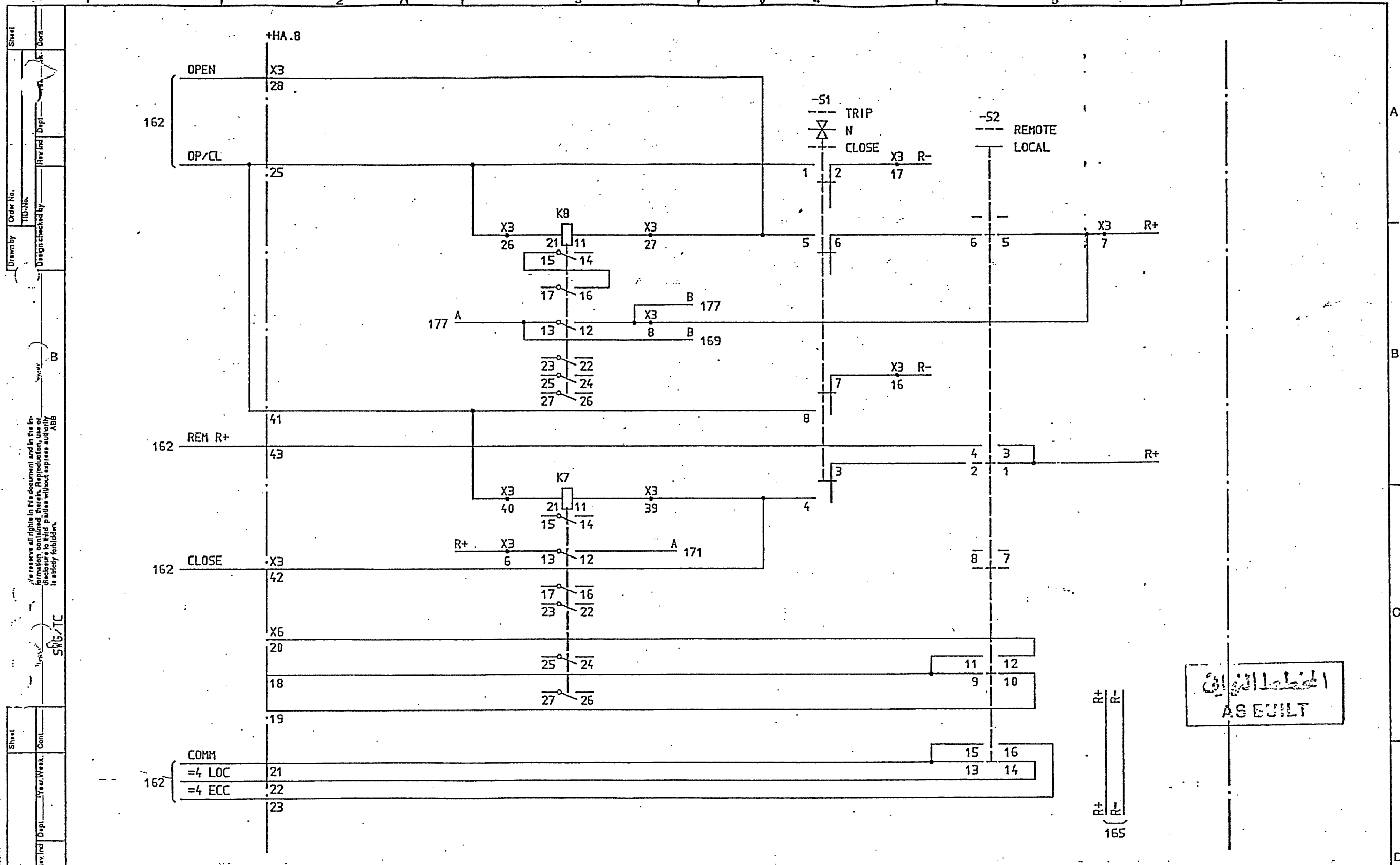
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S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Issued by Dept Year Week
TDCF 90 36

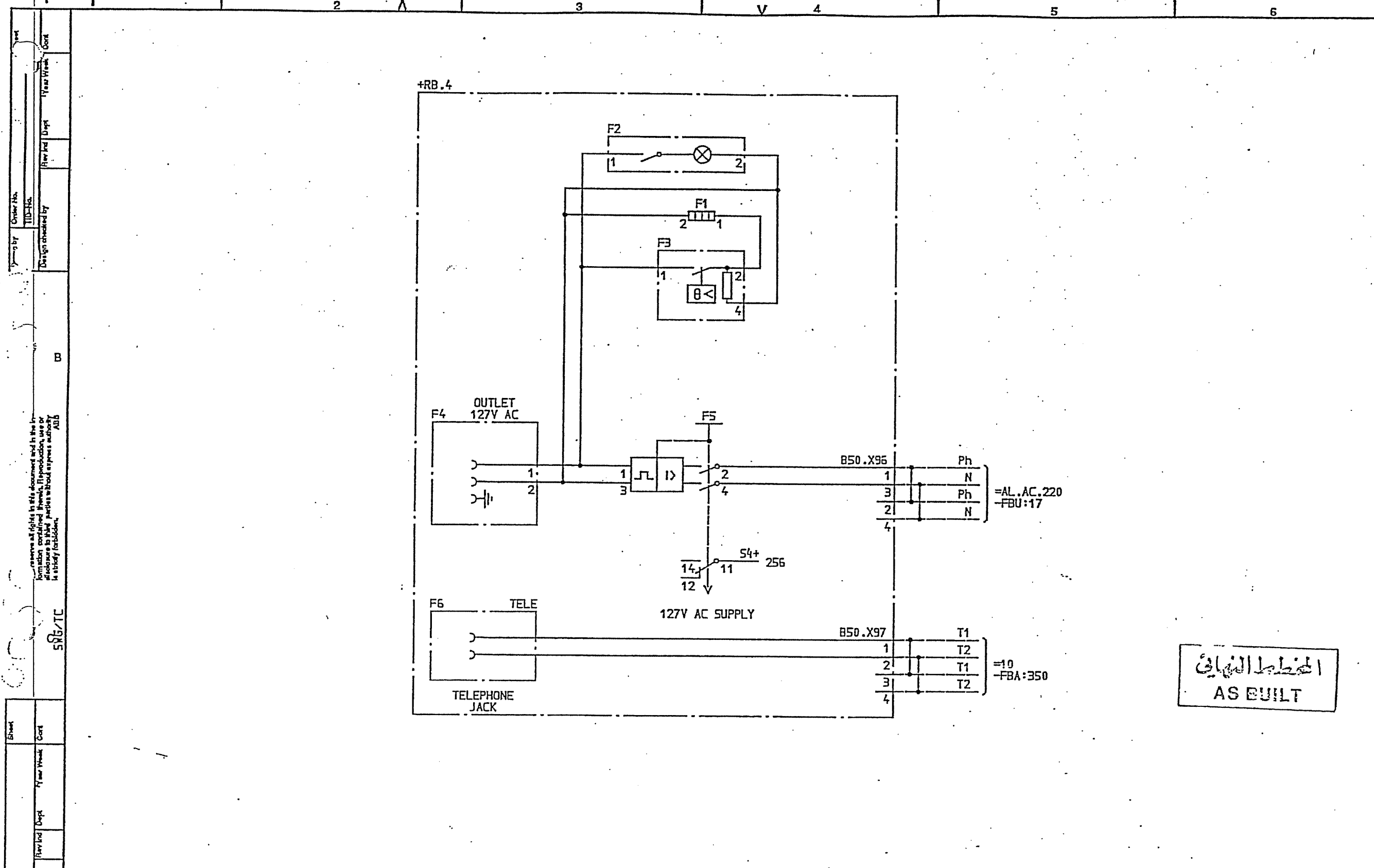
L 9743.1017
XL 824 028-FBR

Rev Issued Sheet
Long Sheet
1 166

1 168



SYMBOL ID /D:XL824028-FBR:168/0		92-07-02 18.53		=4		33/13,8kV TRANSFORMER BAY T12		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev Ind Sheet	
2		LS		92 26		=4		Drawing checked by L SVENSSON		S/S 8501 132/33kV		Lang Sheet	
1		LS		91 21		C.B SELECTOR SWITCHES		Drawn by PN		SCECO CENTRAL SAUDI ARABIA		Rev Ind Sheet	
Rev Ind		Appd		Year Week		Use by Dept		Year Week		L 9743.1017		Lang Sheet	
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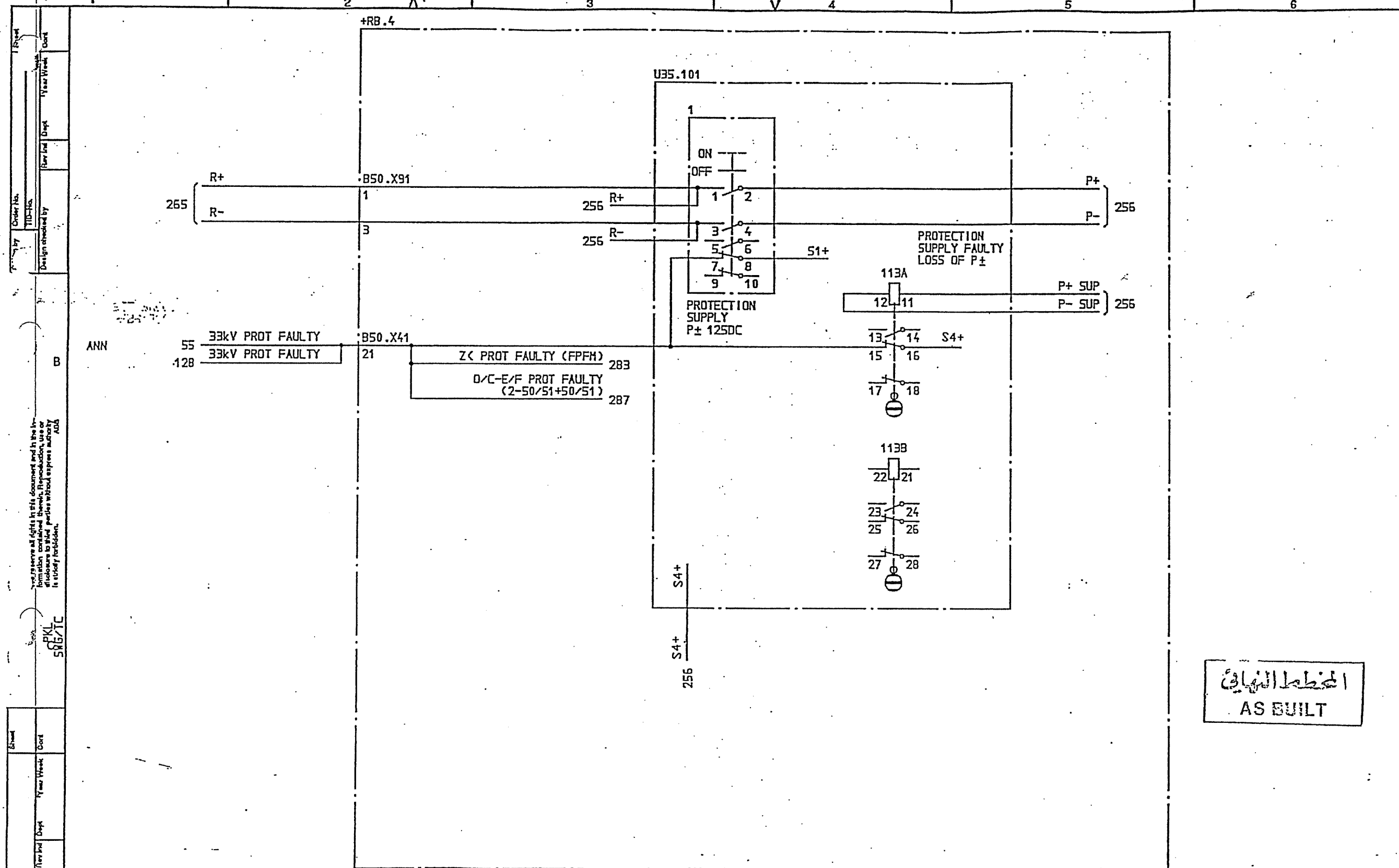


الخطة النهائية
AS BUILT

SYMBOL ID: XL824028-FBR:254/0 DATE 91-06-04 09.07

1 AS BUILT Rev No. 1 Date 91 21	=6 33kV INTERCONNECTOR LINE AC AND TELEPHONE JACKET CIRCUITS VOLTAGE DISTRIBUTION	Design checked by B NILSSON Drawing checked by J SKOVGAARD Drawn by GH	CIRCUIT DIAGRAM 5/5 8501 132/33kV SCECO CENTRAL SAUDI ARABIA ABB HV SWITCHGEAR Rev by Dept TCF Year Week 90 08	L 9743.1017 XL 824 028-FBR Rev No. 1 Sheet 255
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ABB



المخطط الكهربائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:255/0

DATE 91-06-04 09.07

1	AS BUILT	L5	91 21
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=6
33kV INTERCONNECTOR LINE
PROTECTION SUPPLY
VOLTAGE DISTRIBUTION

Design checked by
B NILSSON
Drawing checked by
J SKOVGAARD
Drawn by
IA

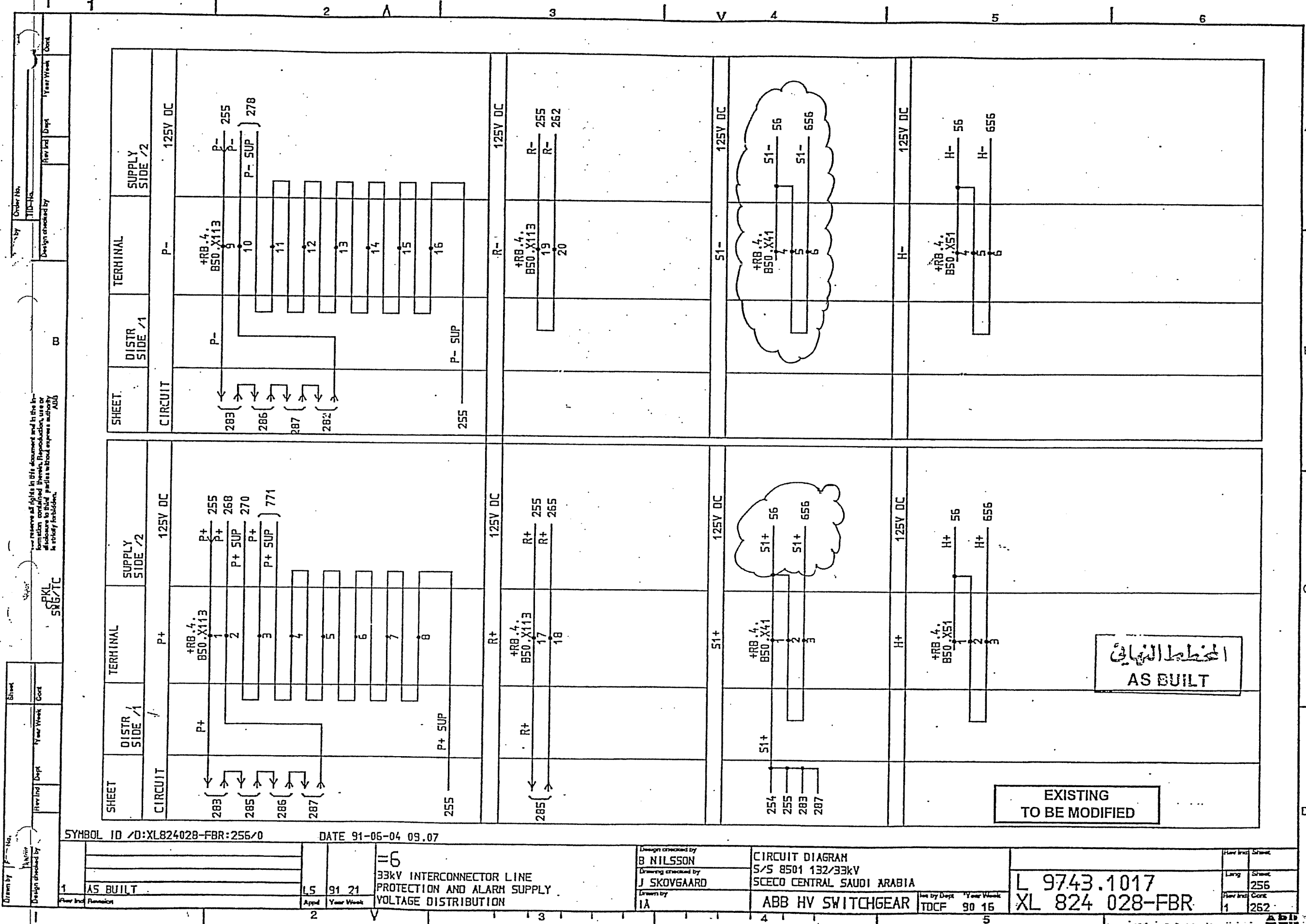
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA

Iss by Dept Year Week
TDCF 90 15 5

L 9743.1017
XL 824 028-FBR

Rev Ind	Sheet
1	255
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AS BUILT



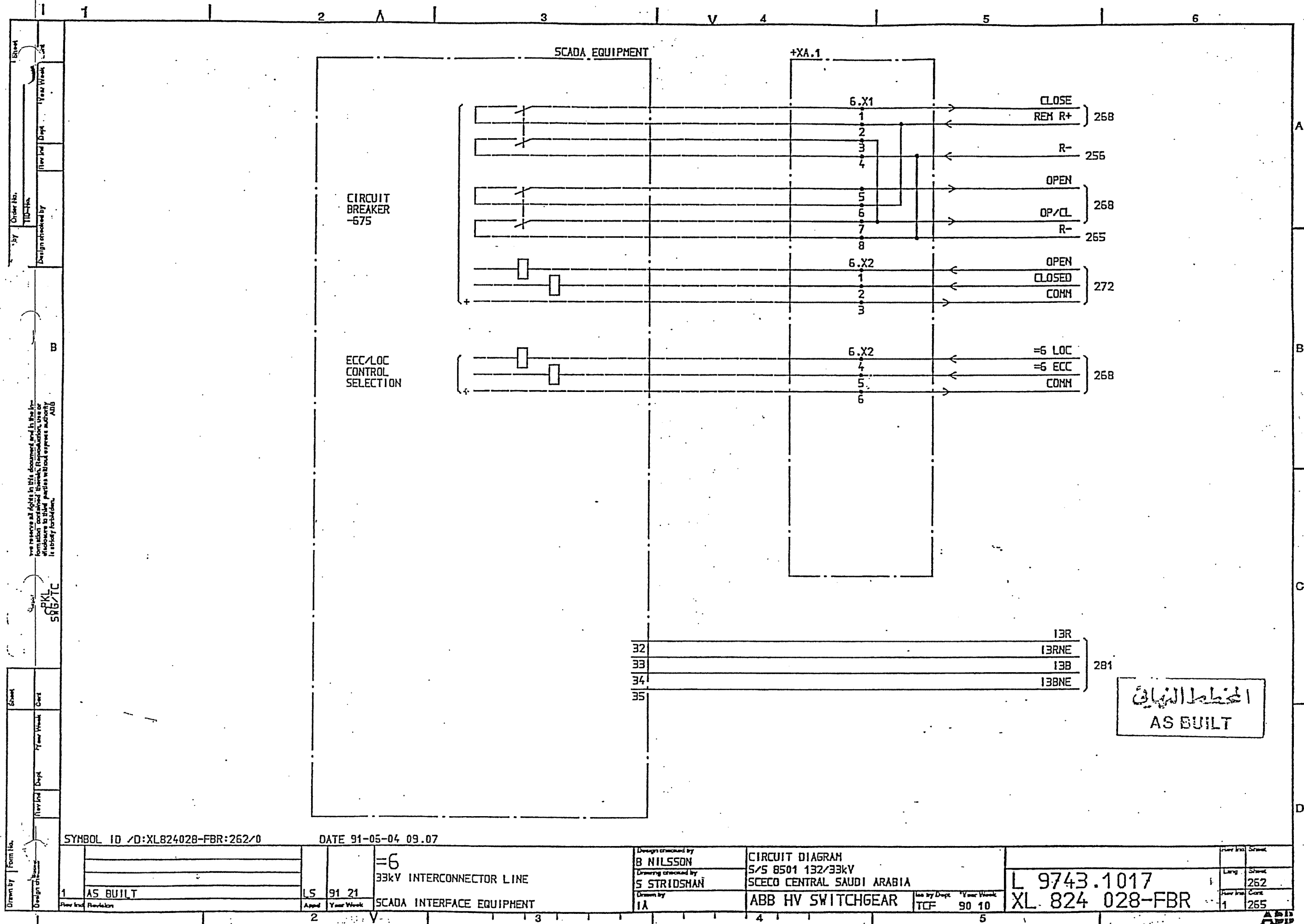
المخطط النهائي
AS BUILT

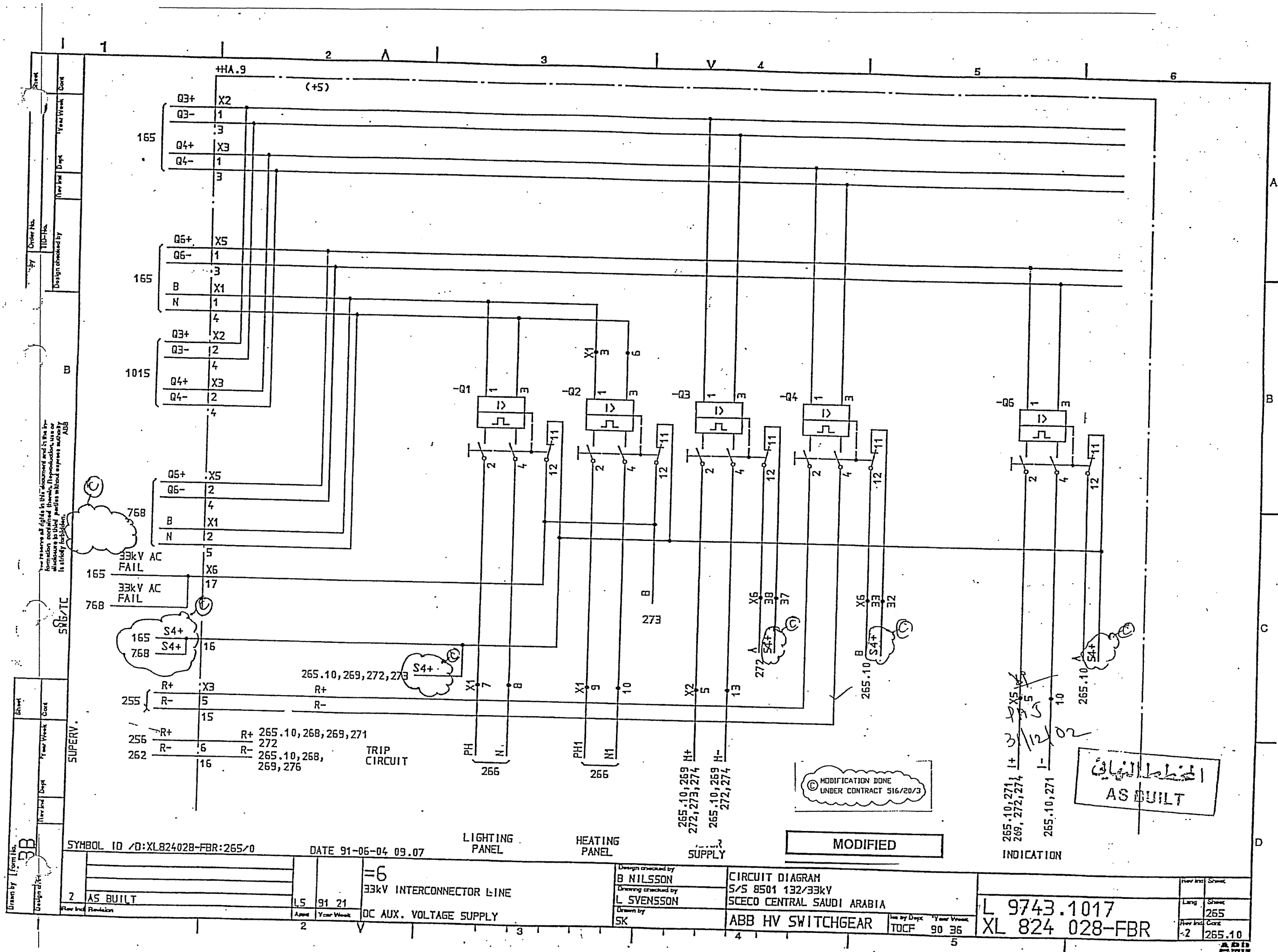
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TO BE MODIFIED

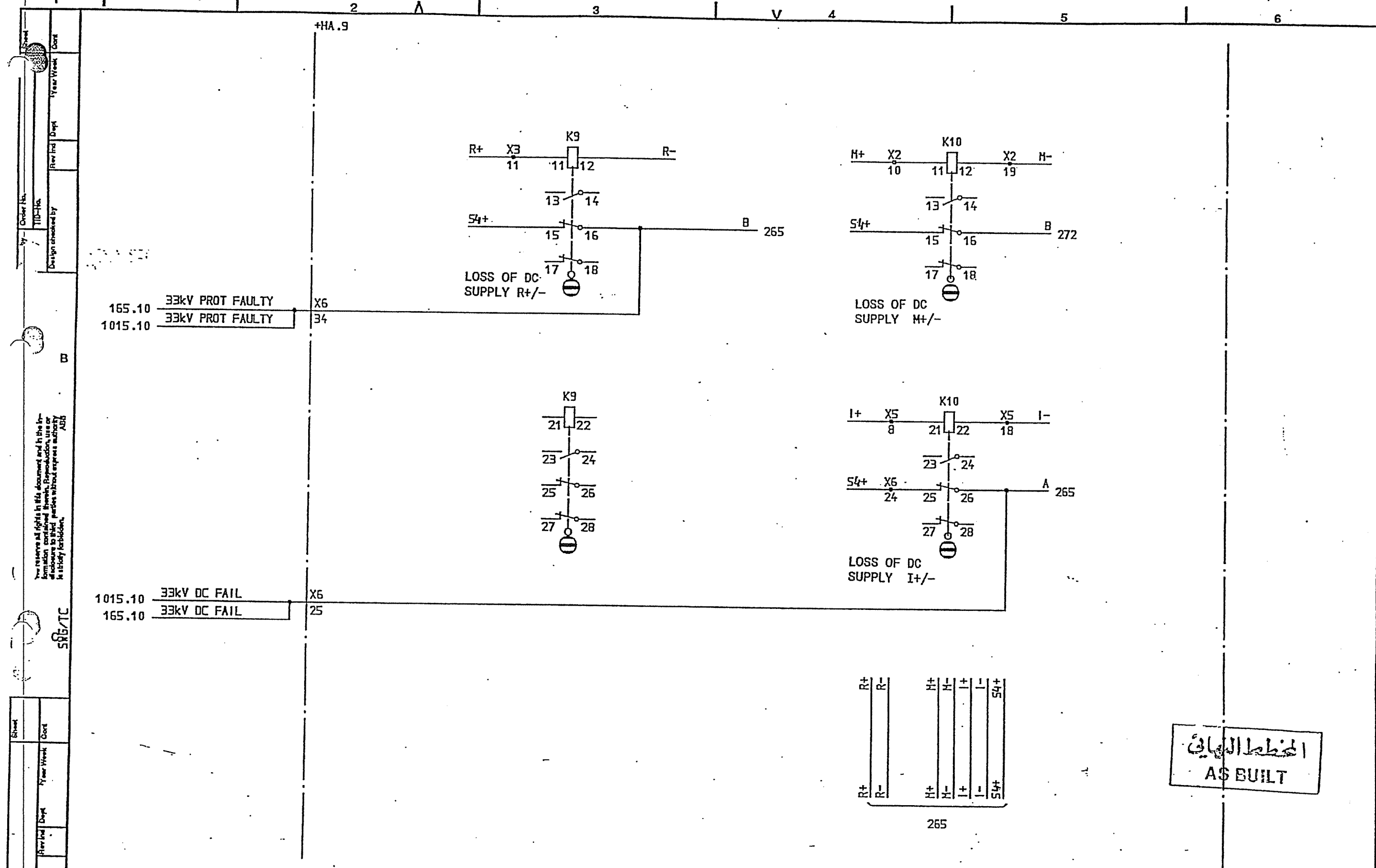
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AS BUILT		=6	
15 91 21		33kV INTERCONNECTOR LINE	
Appd Year Week		PROTECTION AND ALARM SUPPLY	
		VOLTAGE DISTRIBUTION	
Design checked by		Design checked by	
J SKOVGAARD		B NILSSON	
Drawn by		CIRCUIT DIAGRAM	
IA		S/S 8501 132/33kV	
		SCECO CENTRAL SAUDI ARABIA	
Abb HV SWITCHGEAR		L 9743.1017	
TDCF 90 15		XL 824 028-FBR	
Year Week		Year Week	
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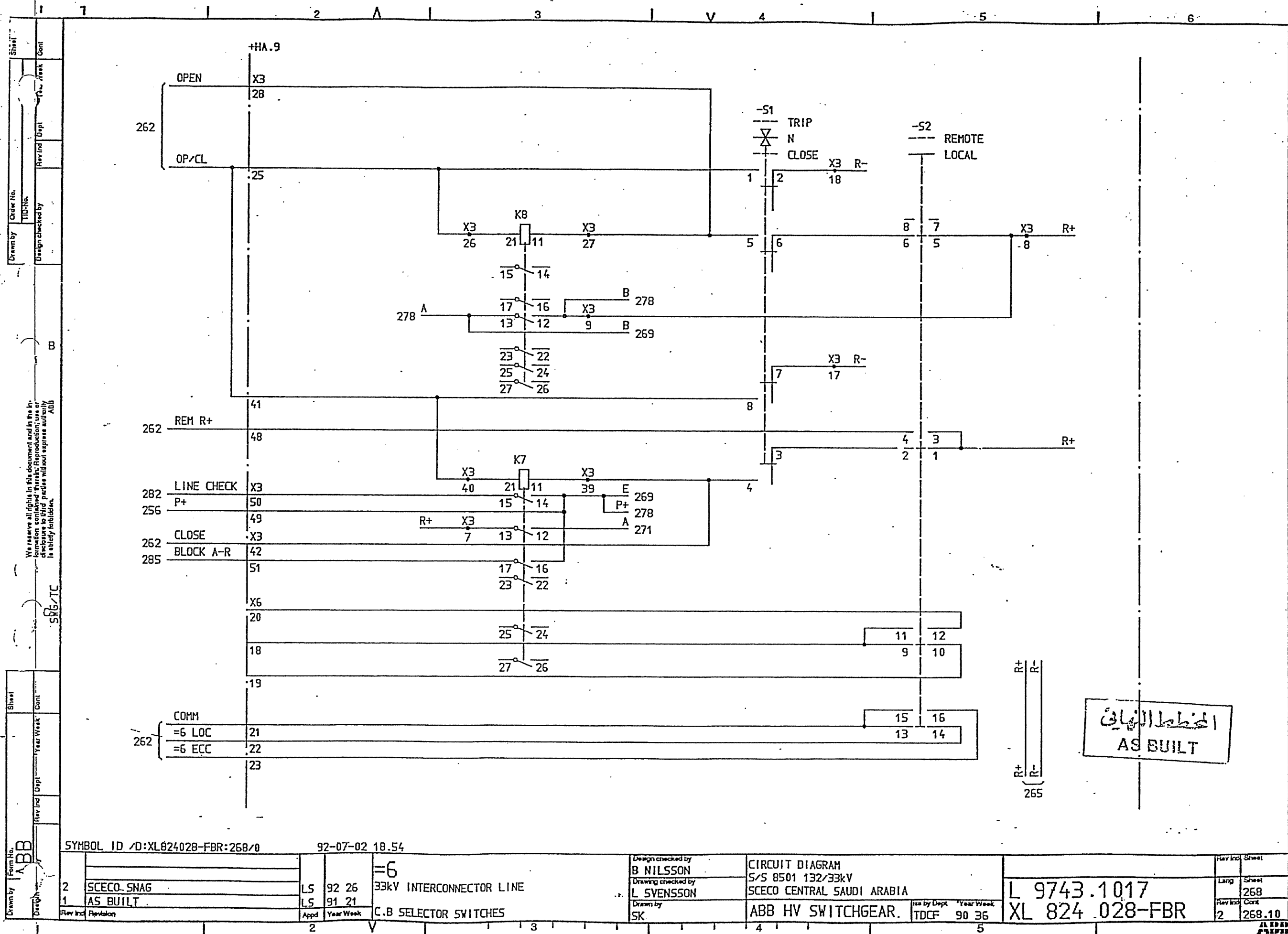


المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:265.10/0 DATE 91-06-04 09.07

1		LS		91 21		=6		33kV INTERCONNECTOR LINE		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev Ind Sheet	
AS BUILT						DC AUX. VOLTAGE SUPPLY		Drawing checked by L SVENSSON		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		Lang Sheet	
								Drawn by SK		ABB HV SWITCHGEAR		Iss by Dept Year Week TDCF 90 36		Rev Ind Cont	
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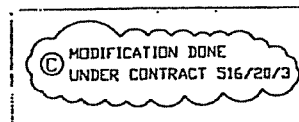
ABB



Drawn by	ABB	Rev	Ind	Dept	Year	Week	Cont
Design checked by	ABB	Rev	Ind	Dept	Year	Week	Cont
SYMBOL ID	/D:XL824028-FBR:268/0	92-07-02	18.54				
2	SCECO SNAG	LS	92	26			
1	AS BUILT	LS	91	21			
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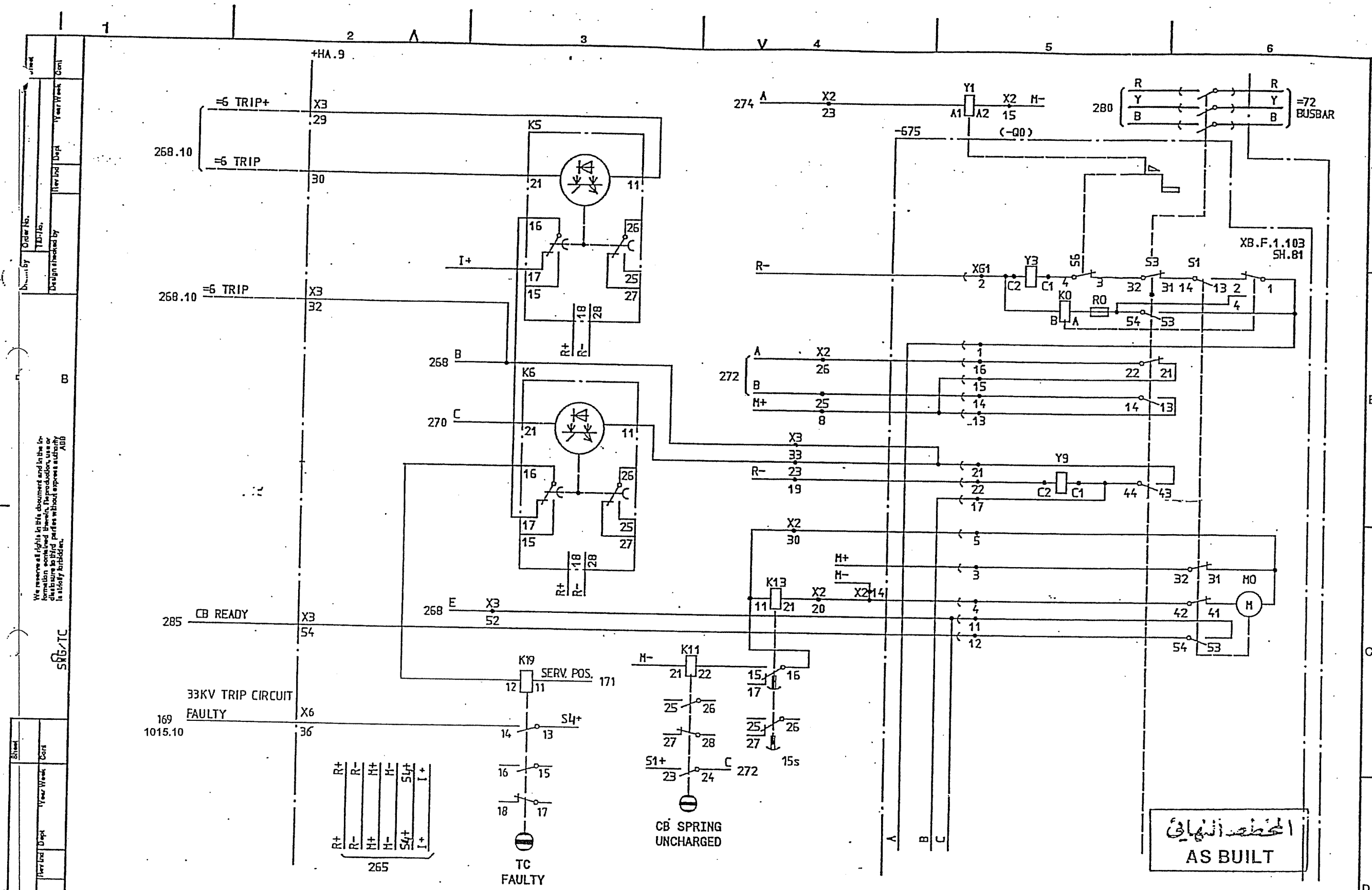
الخطة النهائية
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ADMINISTRATIVE



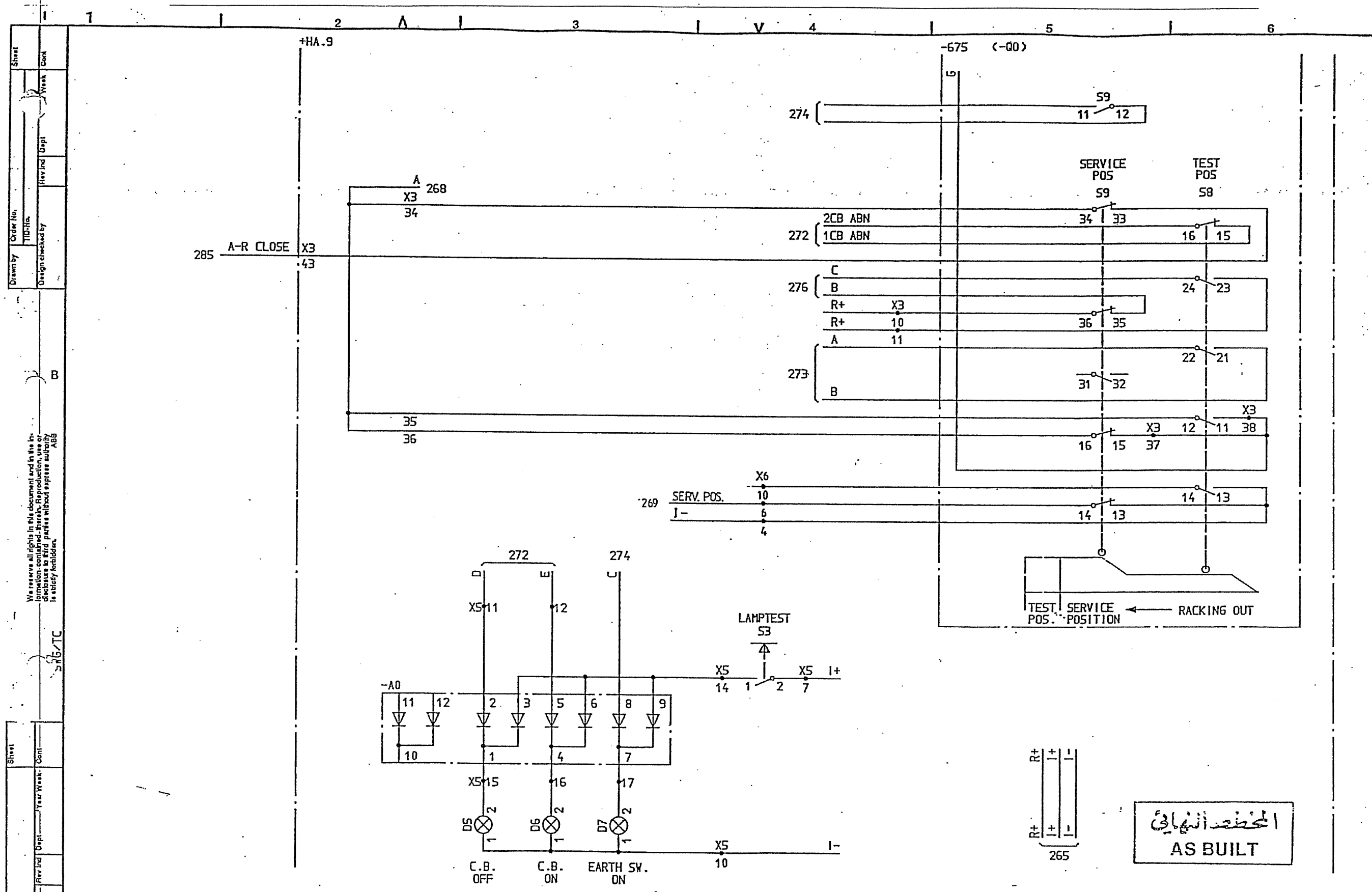
المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:269/0				92-09-09 07.33																			
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								B NILSSON		S/S 8501 132/33kV				Lang		Sheet							
								Drawing checked by		5/5 8501 132/33kV													
1	AS BUILT			LS	91 21			L SVENSSON		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		269									
Prev Issd		Revision		Appd		Year/Week		CIRCUIT BREAKER EQUIPMENT -675		Drawn by		ABB HV SWITCHGEAR		Iss by Dept		Year/Week		Rev		Sheet			
				2		V				SK		TDCF		90 36		5		2.1		270			

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Design checked by: B
Issued by: TDCE
Year: 90
Week: 36

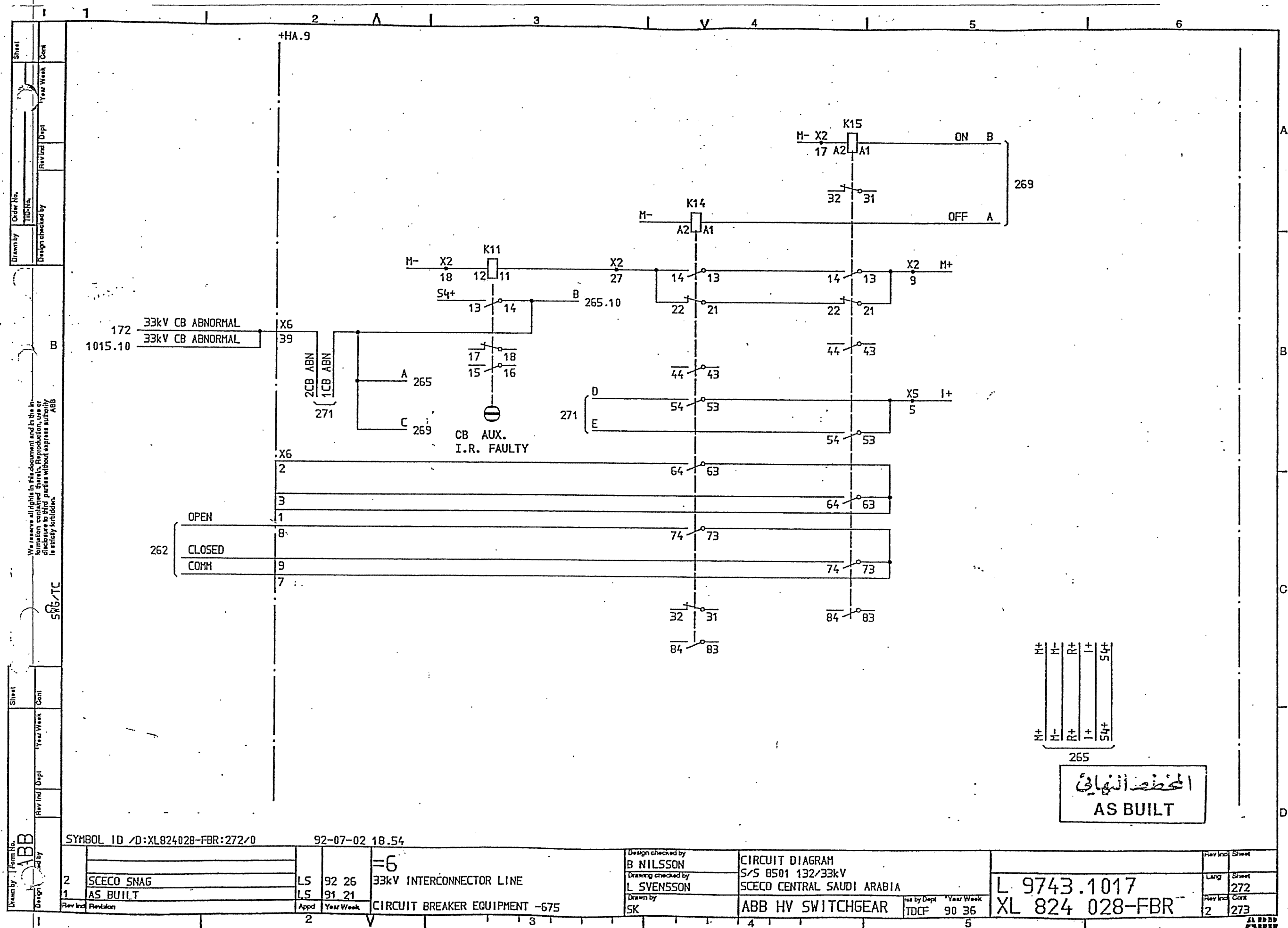
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Design checked by: B
Issued by: TDCE
Year: 90
Week: 36

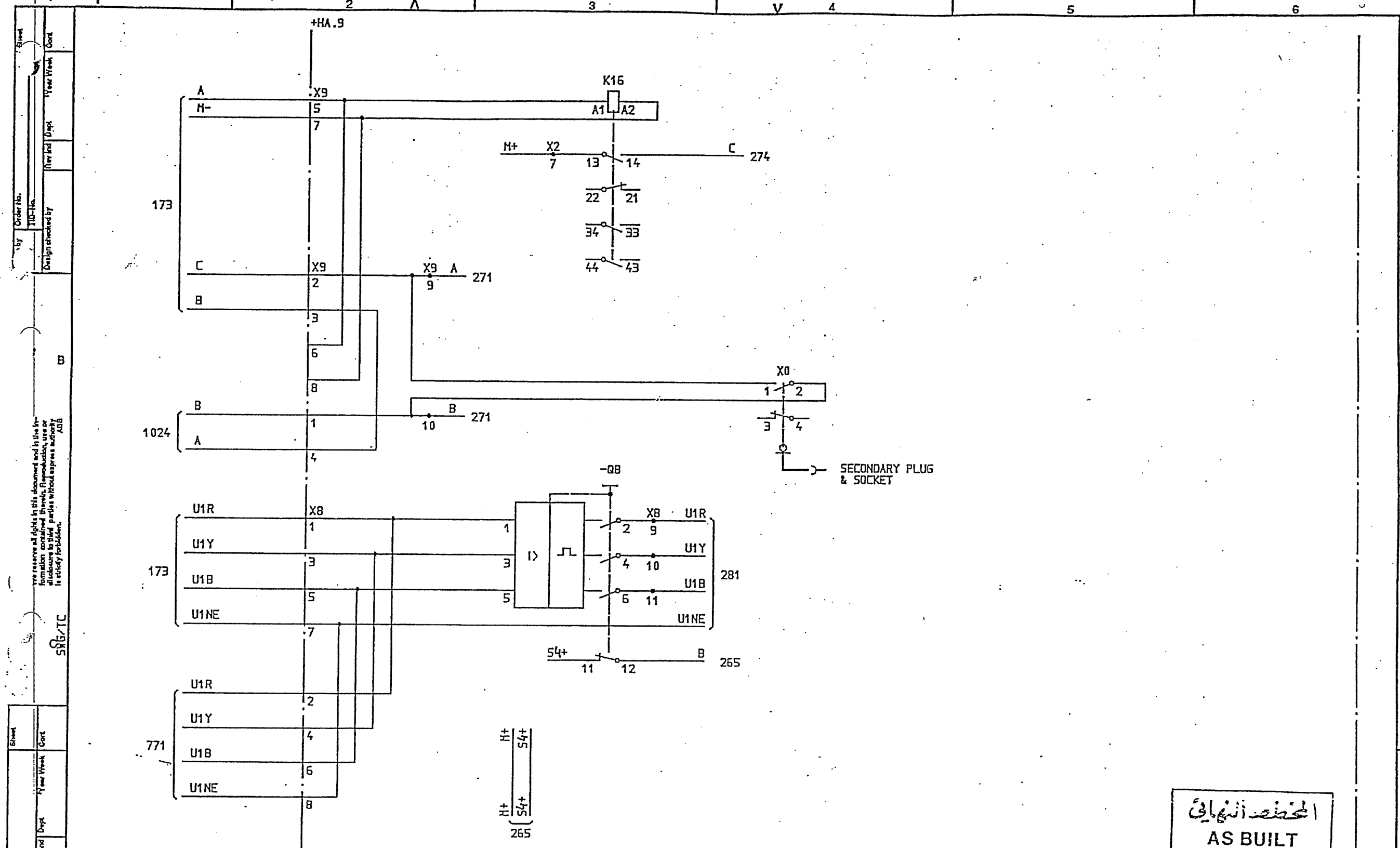


المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:271/0		92-07-02 18.54		=6		33kV INTERCONNECTOR LINE		CIRCUIT BREAKER EQUIPMENT -675		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		L 9743.1017 XL 824 028-FBR		Rev Ind Sheet	
2.1	SCECO SNAG	LS	92 26	LS	91 21	LS	92 26	LS	91 21	LS	92 26	LS	91 21	LS	92 26
1	AS BUILT	LS	91 21	LS	91 21	LS	91 21	LS	91 21	LS	91 21	LS	91 21	LS	91 21
Rev Ind Revision		Appd Year Week		Appd Year Week		Appd Year Week		Appd Year Week		Appd Year Week		Appd Year Week		Appd Year Week	

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PAID





المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:273/0

DATE 91-06-06 12.05

1	AS BUILT	L5	91 21	INTERLOCKING RELAY FOR C.B. TRUCK
2				

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

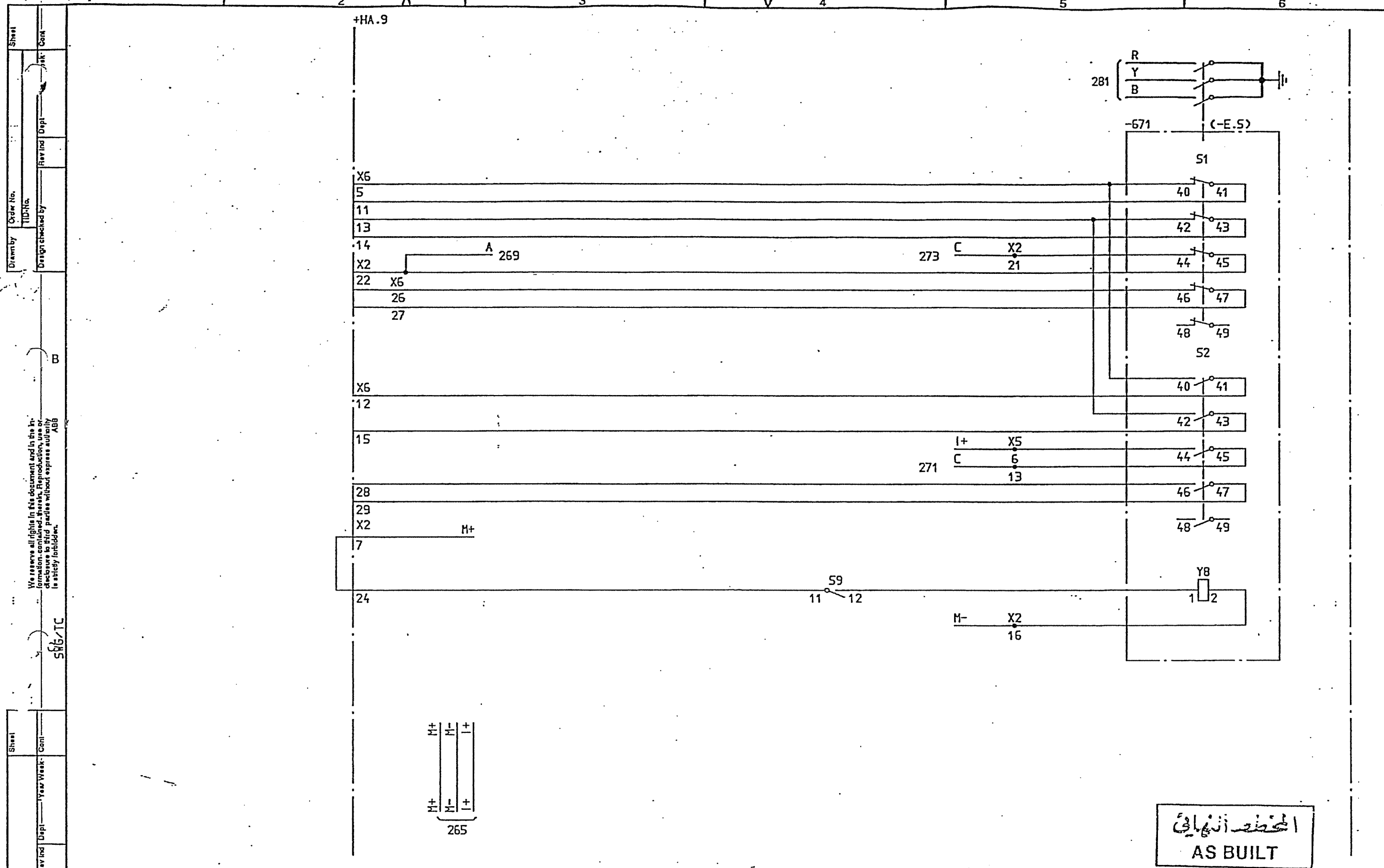
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824 028-FBR

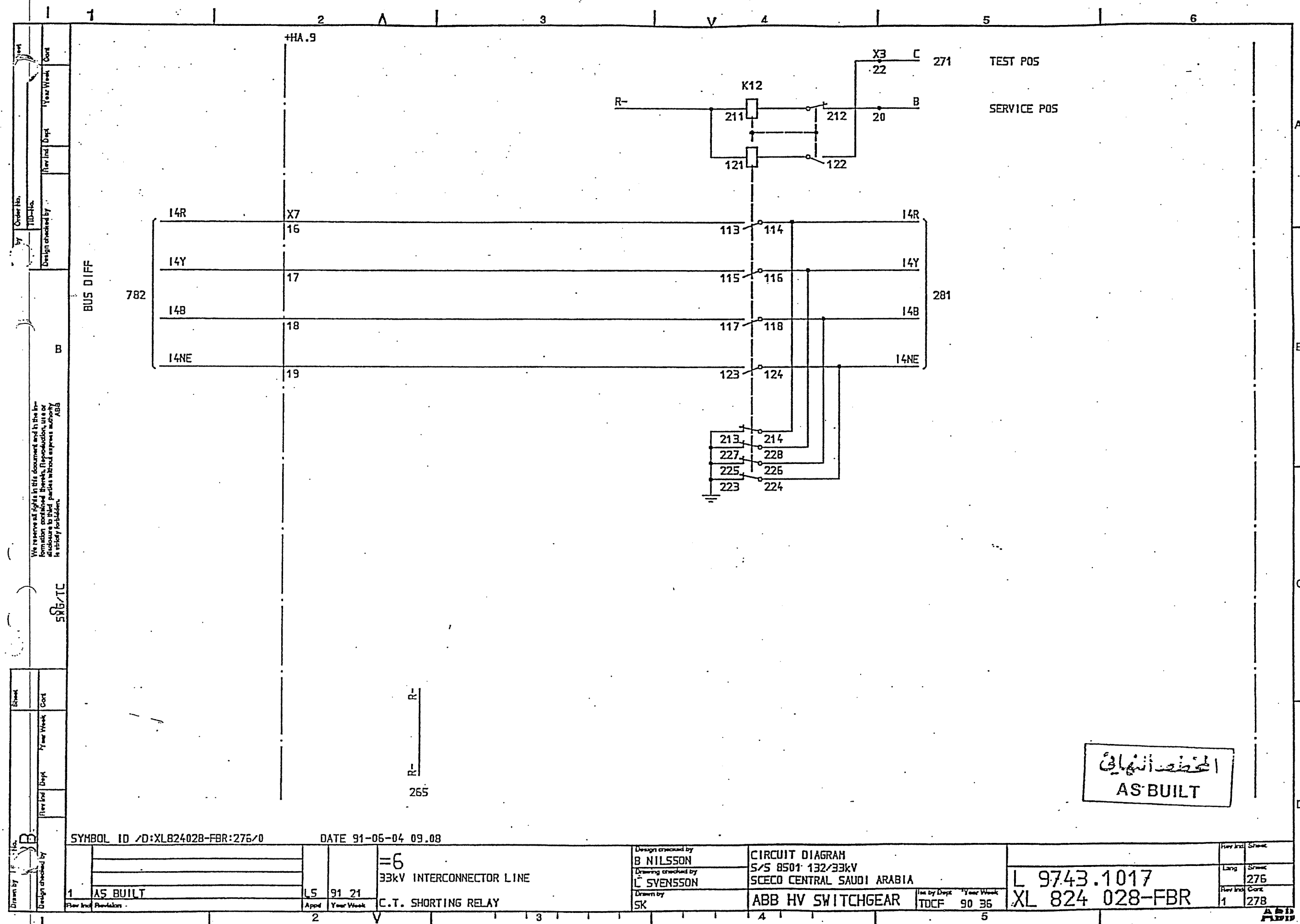
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Long	273
Drawn by	Sheet
Long	274

ABB



Drawn by: BB		Rev Ind: Cont		Year Week: Cont		Rev Ind: Cont		Year Week: Cont	
Design checked by: SNG/TC		Rev Ind: Cont		Year Week: Cont		Rev Ind: Cont		Year Week: Cont	
SYMBOL ID /D:XL824028-FBR:274/0		92-07-02 18.54		=6		33kV INTERCONNECTOR LINE		CIRCUIT DIAGRAM	
2 SCECO SNAG		LS 92 26		LS 91 21		EARTH SWITCH EQUIPMENT -671		S/S 8501 132/33kV	
1 AS BUILT		Appd		Year Week		Design checked by: B NILSSON		SCECO CENTRAL SAUDI ARABIA	
Rev Ind: Revision		2		3		Drawing checked by: L SVENSSON		L 9743.1017	
						Drawn by: SK		XL 824 028-FBR	
						Iss by Dept: TDCF		90 36	
								274	
								276	

ADD PAID



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DIST. PROT

283 MAIN PROT TRIP

+HA.9

X3

44

TRIP INDIC.
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K18

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13 14

15 16

17 18

K2

268.10 =2TRIP+

X3

31

21 11

13 12

15 14

17 16

23 22

25 24

27 26

287 BACK-UP PROT TRIP

X3

46

K3

21 11

13 12

15 14

17 16

23 22

25 24

27 26

256 P-SUP

47

K18

22 21

23 24

25 26

27 28

TRIP INDIC.
94 - BU

المحطة انشائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:278/0

92-09-09 07.35

2	SCECO SNA6	LS	92 26	=6
1	AS BUILT	LS	91 21	33kV INTERCONNECTOR LINE
				TRIP RELAYS 33kV

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

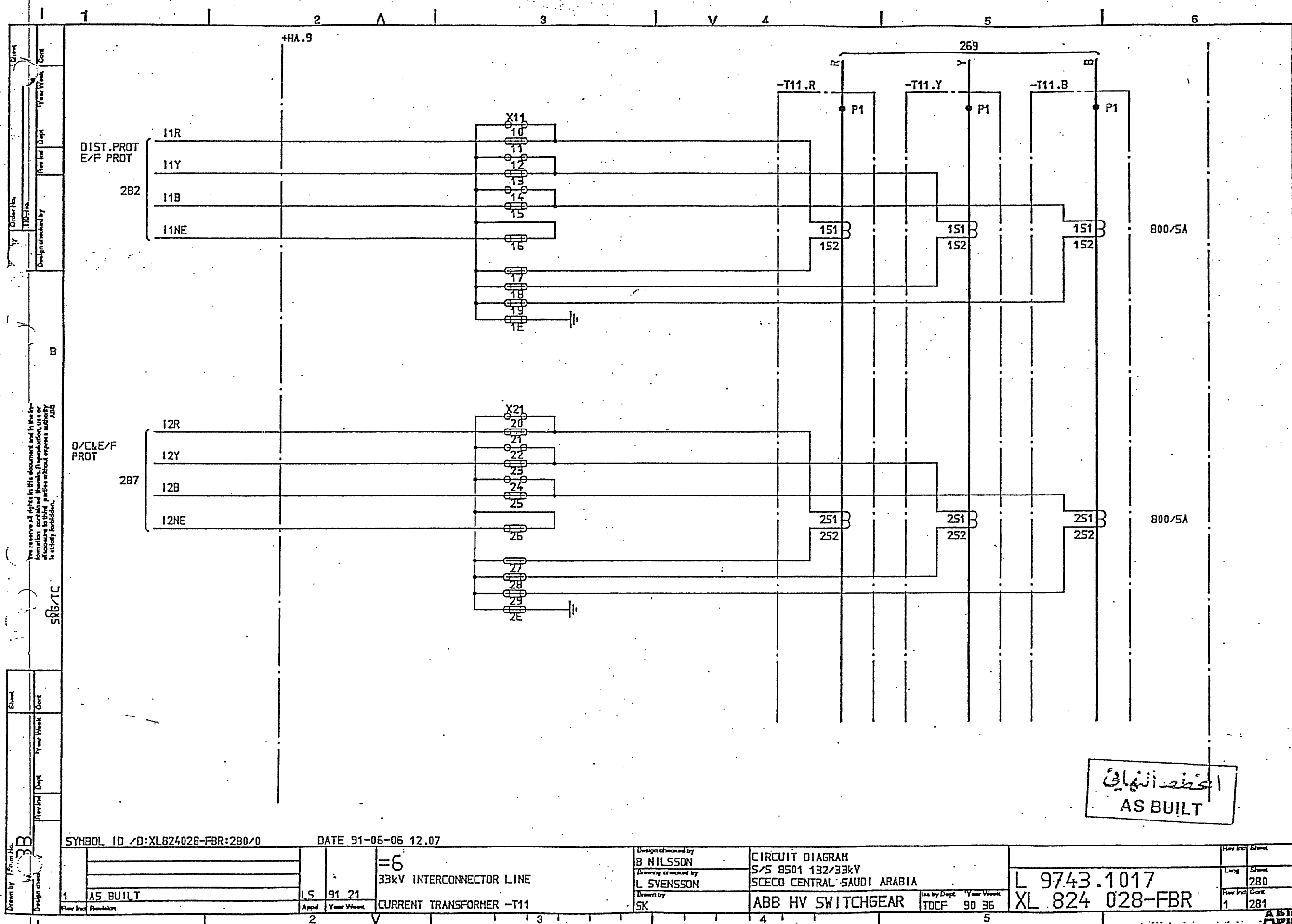
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept Year Week
TOCF 90 36

L 9743.1017
XL 824 028-FBR

Rev	Ind	Sheet
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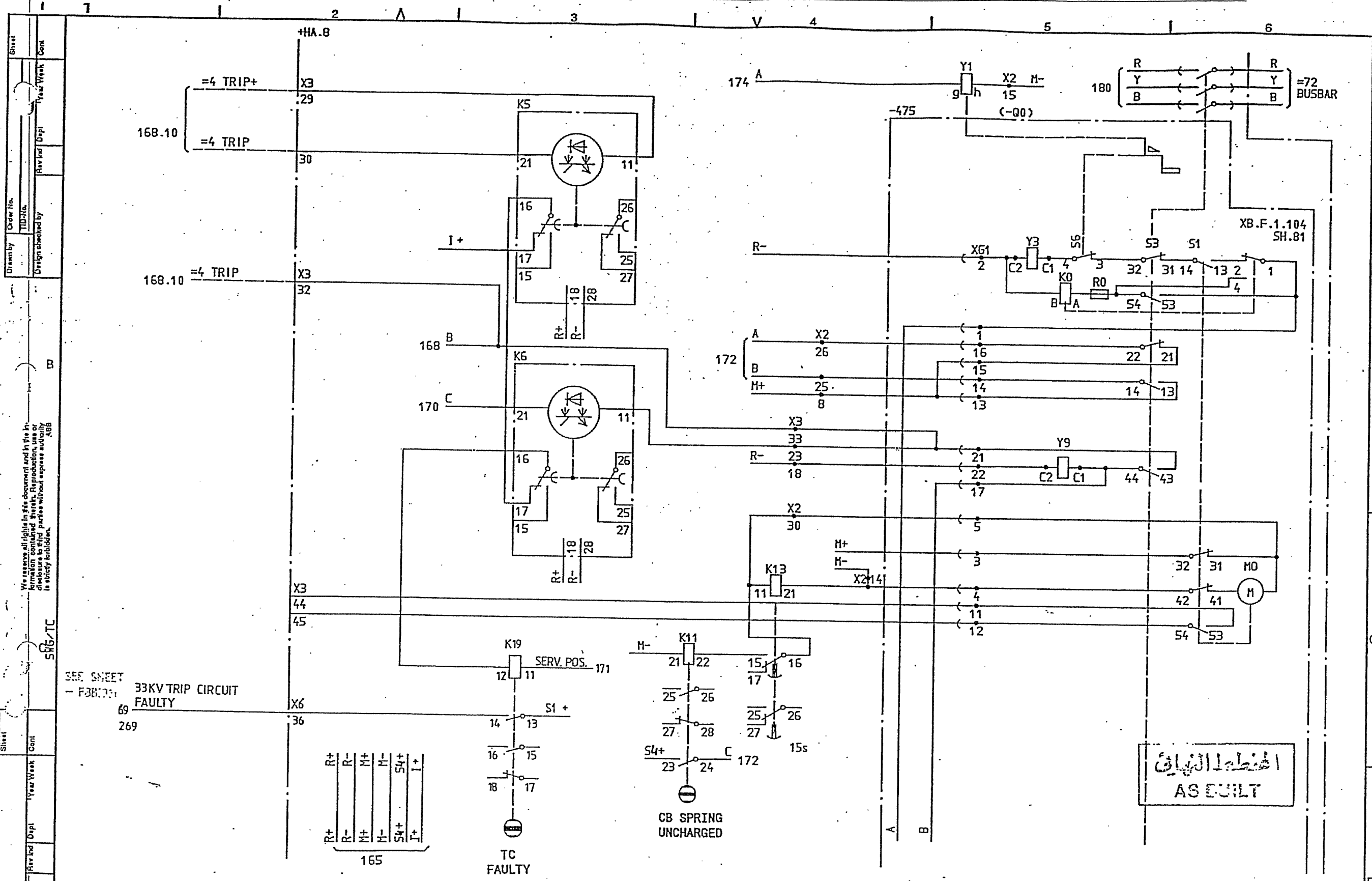


الحفظ النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:280/0

DATE 91-06-06 12.07

1		AS BUILT	LS	91 21	=6 33kV INTERCONNECTOR LINE		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev and Sheet	
1		AS BUILT	LS	91 21	CURRENT TRANSFORMER -T11		Drawing checked by L SVENSSON		S/S 8501 132/33kV		Long	Sheet
1		AS BUILT	LS	91 21	CURRENT TRANSFORMER -T11		Drawn by SK		SCECO CENTRAL SAUDI ARABIA		Rev and	Sheet
1		AS BUILT	LS	91 21	CURRENT TRANSFORMER -T11		Iss by Dept		ABB HV SWITCHGEAR		1	280
1		AS BUILT	LS	91 21	CURRENT TRANSFORMER -T11		TDCF		90 36		1	281



SEE SHEET
- FBR:169
33KV TRIP CIRCUIT
FAULTY

خطا البنيان
AS BUILT

SYMBOL ID /D:XL824028-FBR:169/0

92-07-02 18.53

2.1	SCECO SNAG.	LS	92 26	=4	33/13,8kV TRANSFORMER BAY T12
1	AS BUILT	LS	91 21		
Rev Ind	Revision	Appd	Year Week		CIRCUIT BREAKER EQUIPMENT -475
		2	V		

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
PN

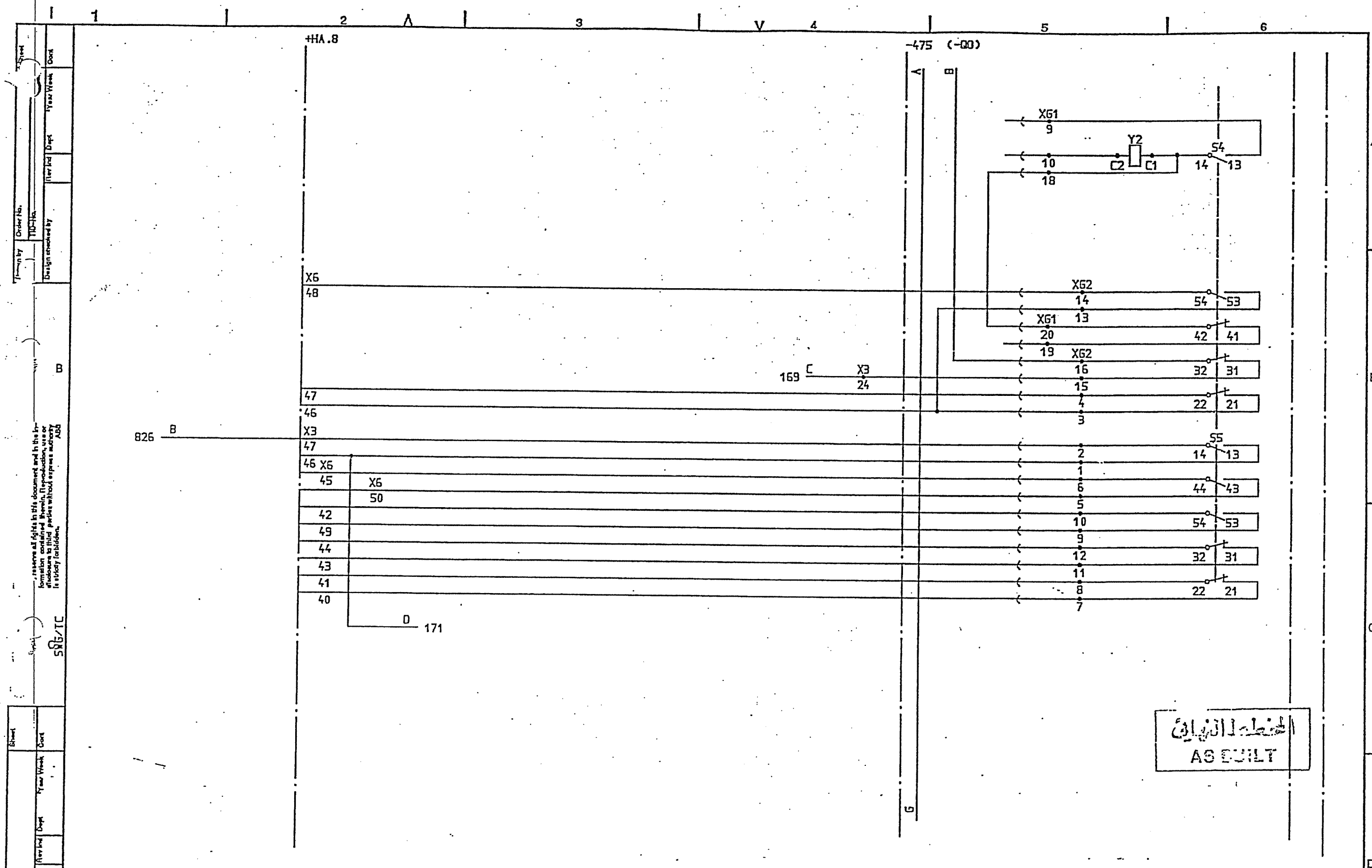
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TDCF 90 36

L 9743.1017
XL 824.028-FBR

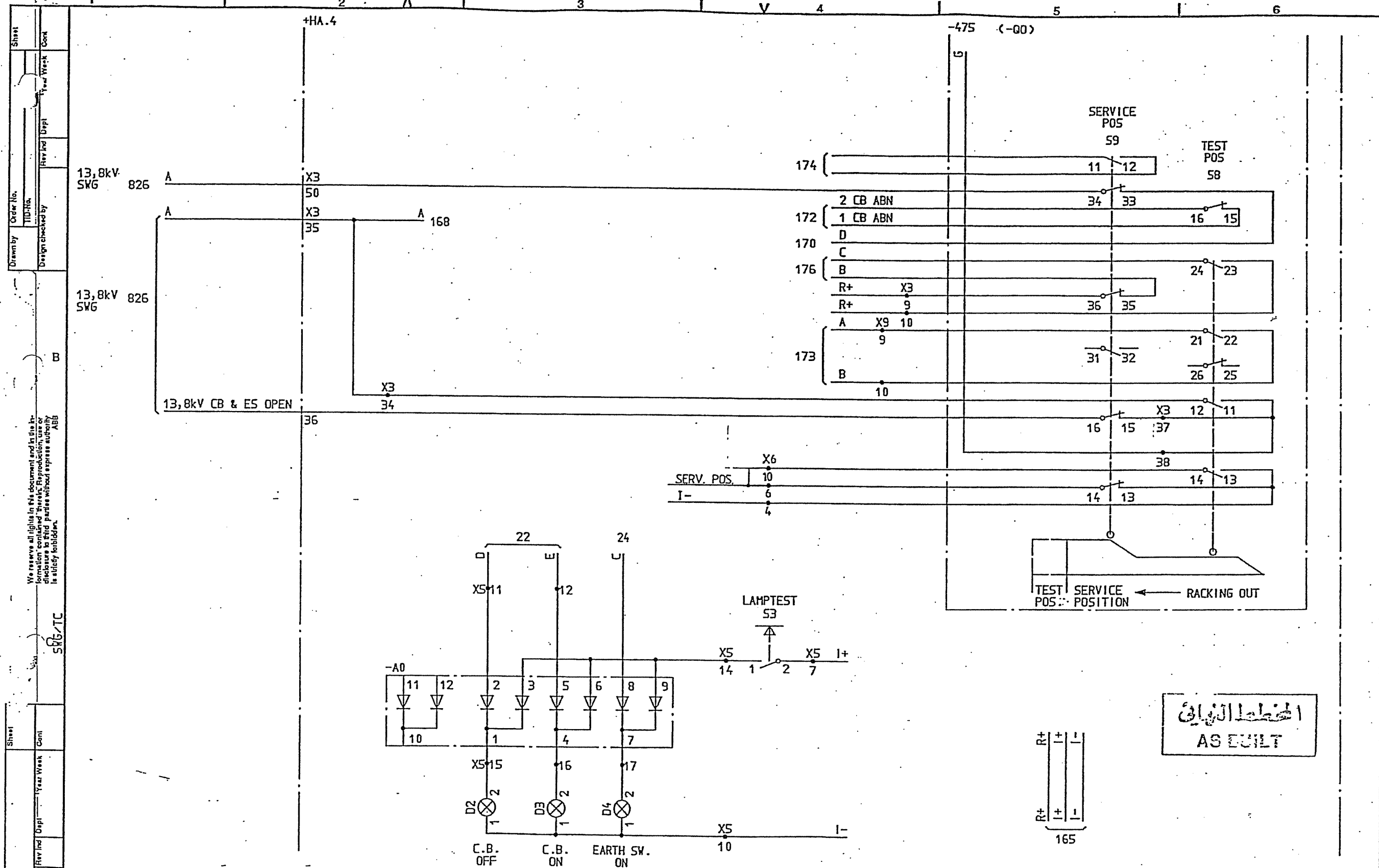
Rev Ind	Sheet
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Rev Ind	Cont
2.1	170

ABB
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المنطقة النهائية
AS EUILT

SYMBOL ID /D:XL824028-FBR:170/0		DATE 91-06-13 12.58		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		Rev Int Sheet	
A5 BUILT		LS 91 21		Drawing checked by L SVENSSON		ABB HV SWITCHGEAR		Lang Sheet 170	
CIRCUIT BREAKER EQUIPMENT -475		Appd Year Week		Drawn by PN		TDCF 90 36		Rev Int Sheet 171	



الخطة المبنية
AS BUILT

SYMBOL ID /D:XL824028-FBR:171/0

92-07-02 18.53

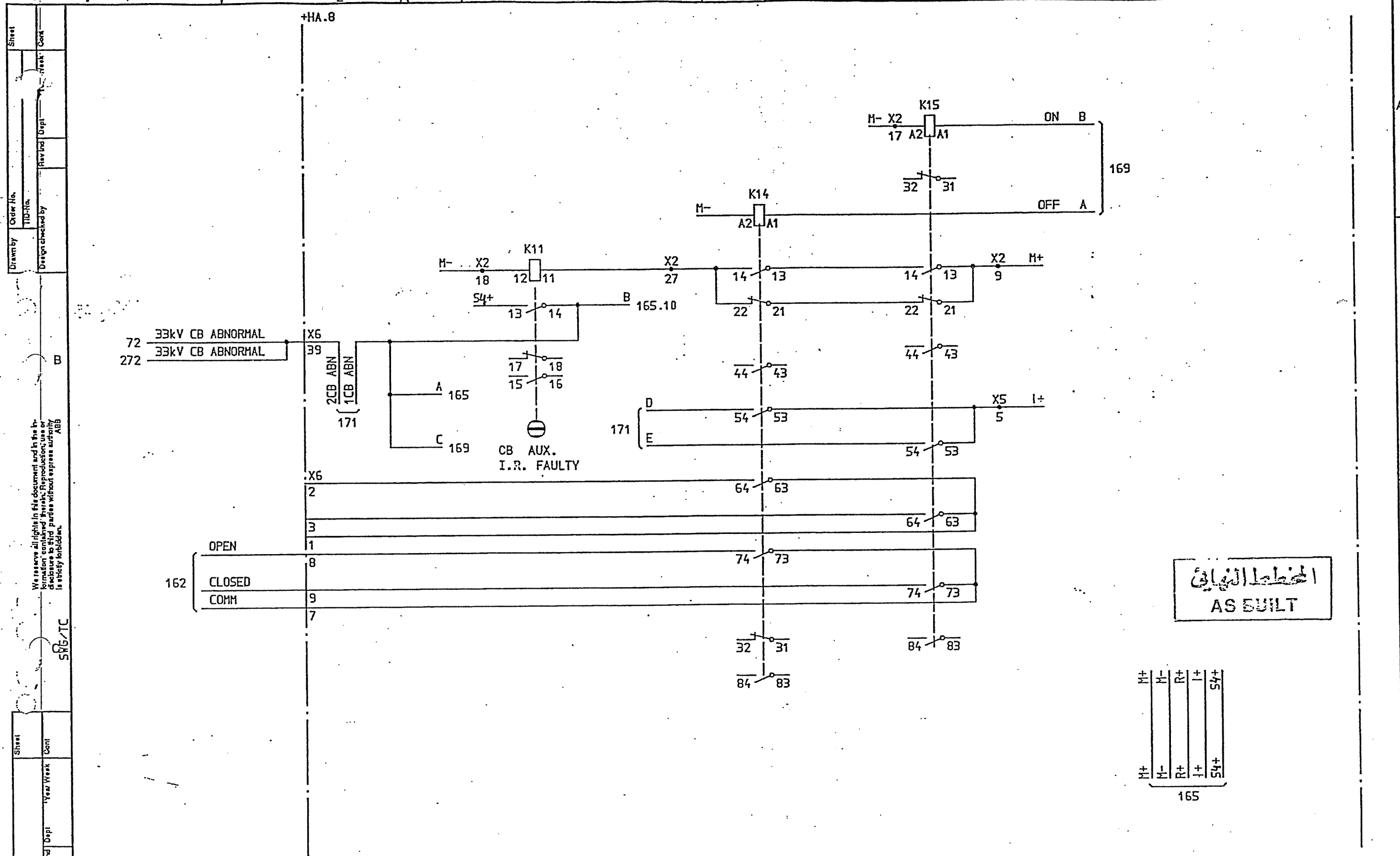
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1	AS BUILT	L5	91 21		
Rev	Inc	Revision	Appd	Year Week	CIRCUIT BREAKER EQUIPMENT -475

Design checked by
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Drawing checked by
L SVENSSON
Drawn by
SK

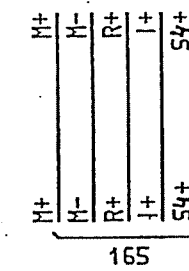
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

L 9743.1017
XL 824 028-FBR

Rev	Inc	Sheet
21	171	172



المخطط النهائي
AS BUILT



SYMBOL ID /D:XL824028-FBR:172/0

92-07-02 18.53

2	SCECO SNAG	LS	92 26	33/13,8kV TRANSFORMER BAY T12
1	AS BUILT	LS	91 21	
Rev Ind	Revision	Appd	Year Week	CIRCUIT BREAKER EQUIPMENT -475

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Drawing checked by
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Drawn by
PN

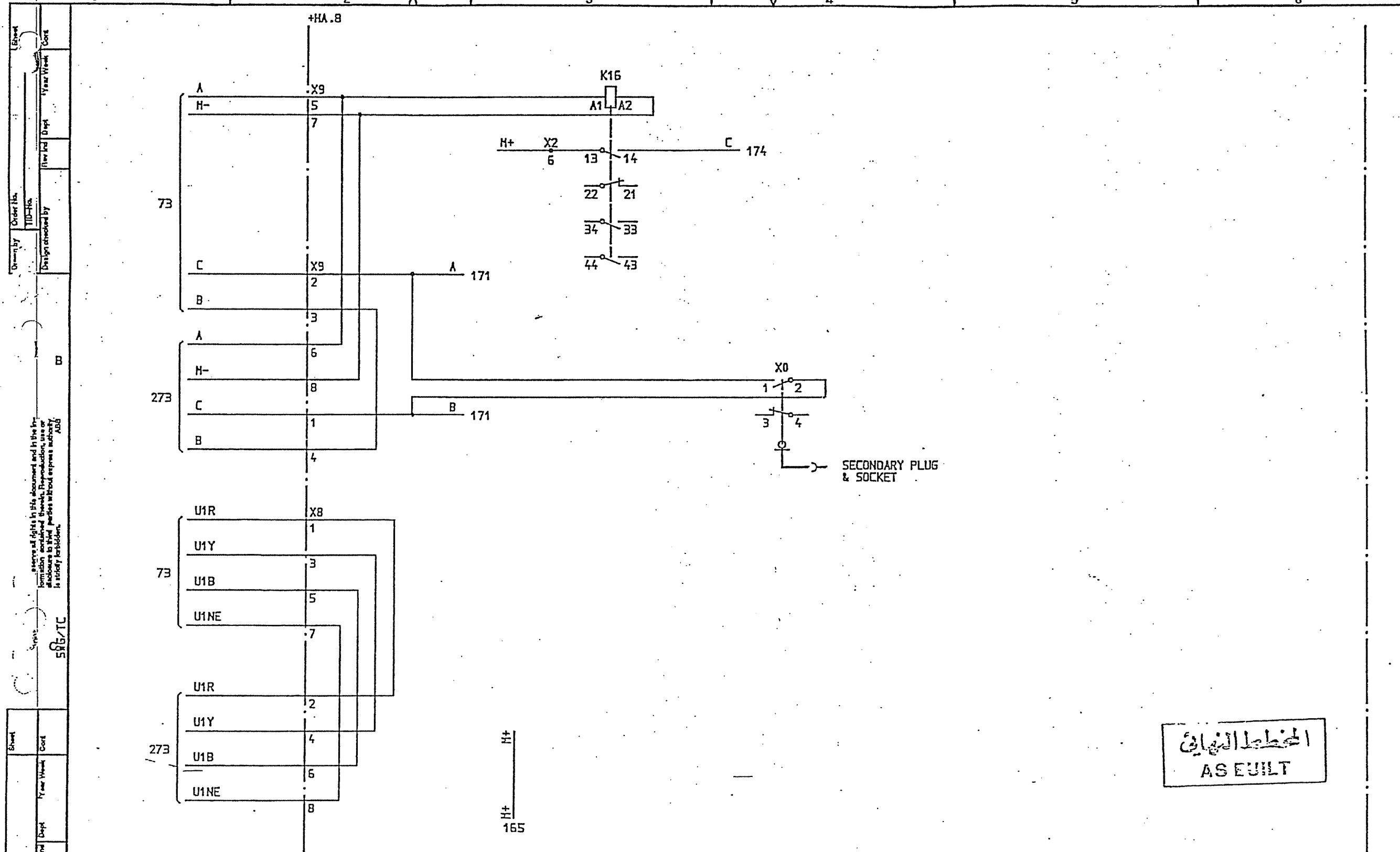
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824 028-FBR

Rev Ind	Sheet
Lang	Sheet
Rev Ind	Sheet
2	173

ALREADY PAID



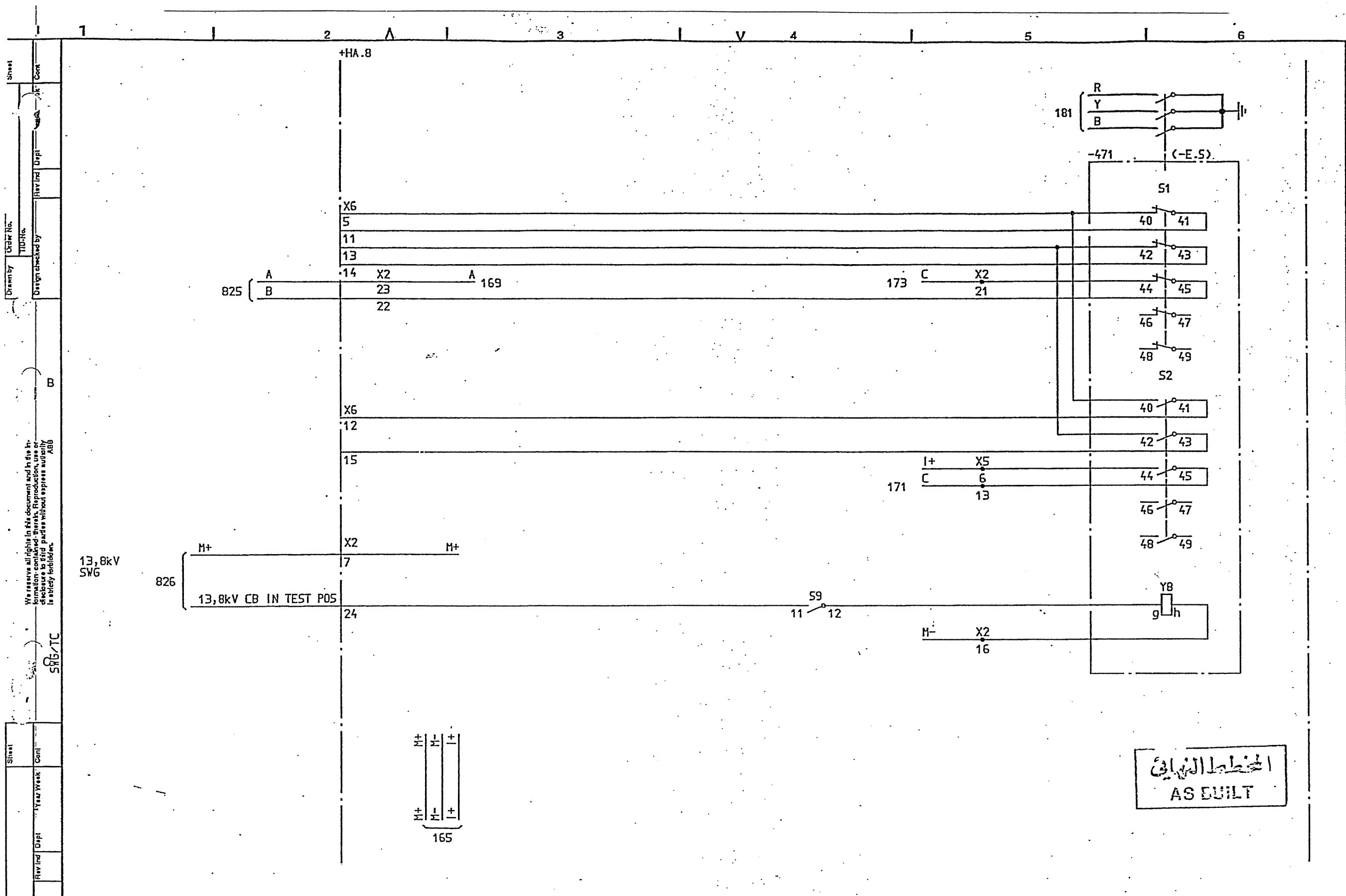
المخطط النهائي
AS EUILT

SYMBOL ID /D:XL824028-FBR:173/0

DATE 91-06-06 12.02

Drawn by B NILSSON	Design checked by L SVENSSON	CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA	Rev Ind Sheet 1 173
1 AS BUILT	LS 91 21	ABB HV SWITCHGEAR	Rev Ind Sheet 1 174
Flow Ind Revision	Aspl Year Week	Interlocking Relay for C.B. Truck	Flow Ind Sheet 1 174

AS EUILT



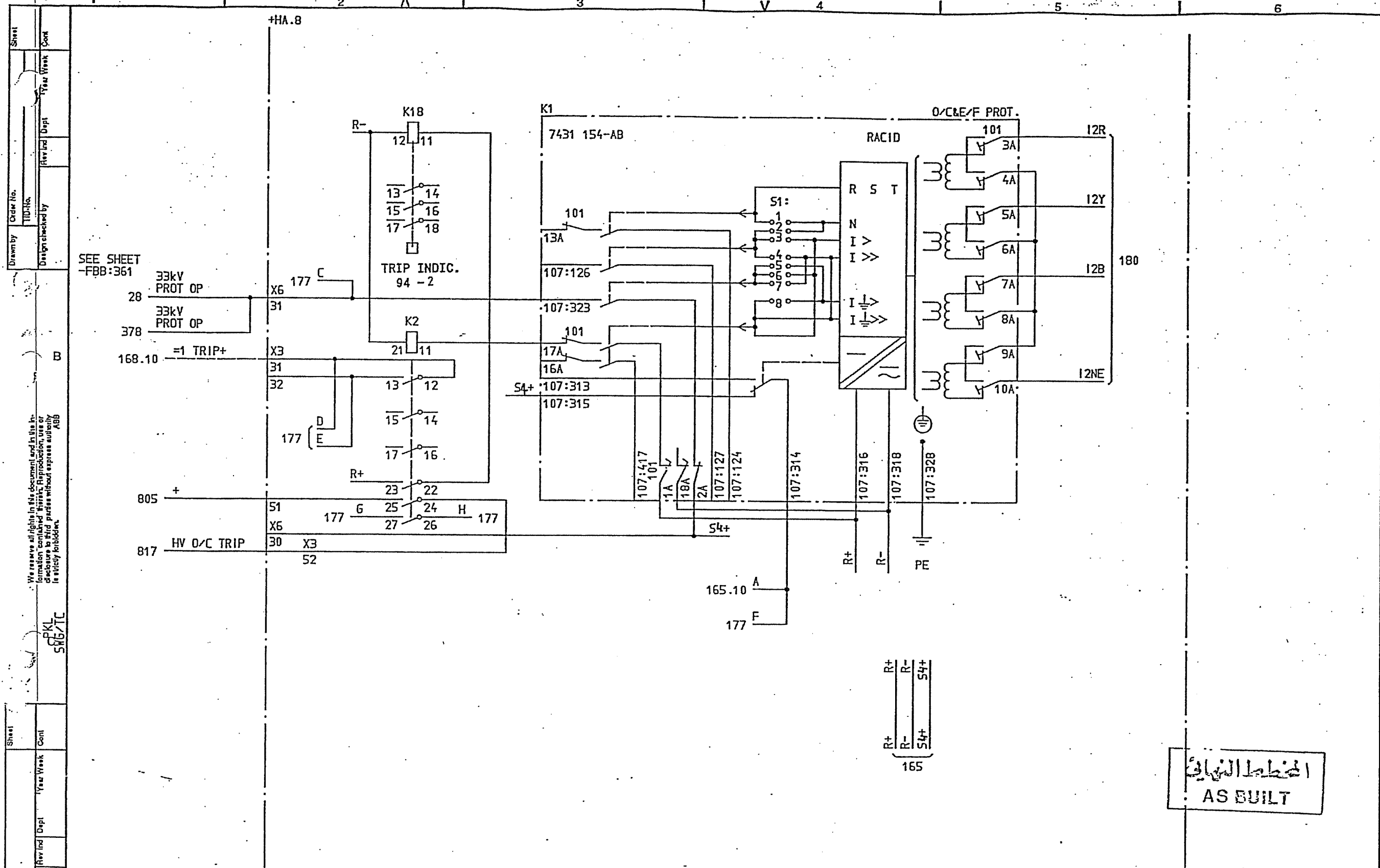
المخطط الكهربائي
AS BUILT

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2 SCECO SNAG		LS 92 26		Drawing checked by L SVENSSON		L 9743:1017		Lang Sheet	
1 AS BUILT		LS 91 21		Drawn by PN		XL 824 028-FBR		Rev Ind Cont	
Rev Ind Revision		Appd Year Week		Iss by Dept Year Week		2 176			
		2 V							

33/13,8kV TRANSFORMER BAY T12
EARTH SWITCH EQUIPMENT -471

ABB HV SWITCHGEAR
TDCF 90 36

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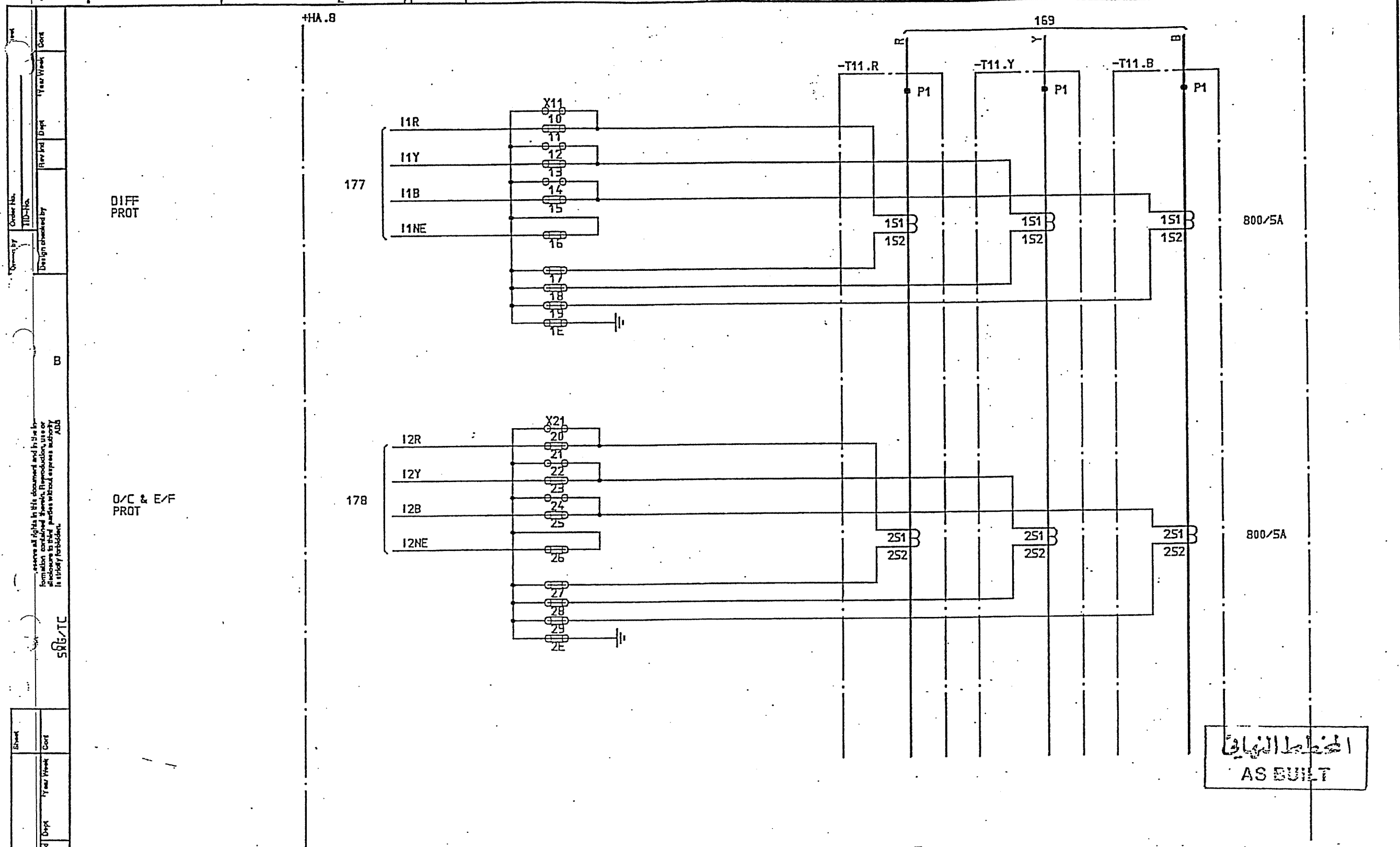
الخط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:178/0		92-07-02 18.54		=4		33/13,8kV TRANSFORMER BAY T12		OVERCURRENT PROT 33kV		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		L 9743.1017 XL 824 028-FBR		2 180	
2	SCECO SNAG	LS	92 26	2	92 26	2	92 26	2	92 26	2	92 26	2	92 26	2	92 26
1	AS BUILT	LS	91 21	1	91 21	1	91 21	1	91 21	1	91 21	1	91 21	1	91 21
Rev Ind Revision		Appd Year Week		Design checked by		Drawing checked by		Drawn by		Iss by Dept		Year Week		Rev Ind Cont	
				B NILSSON		L SVENSSON		SK		TDCF		90 16		2 180	

Drawn by: [Blank]
 Order No.: [Blank]
 Design checked by: [Blank]
 Year Week: [Blank]
 Cont: [Blank]
 Rev Ind: [Blank]
 Revision: [Blank]
 Appd: [Blank]
 Year Week: [Blank]
 Form No.: [Blank]

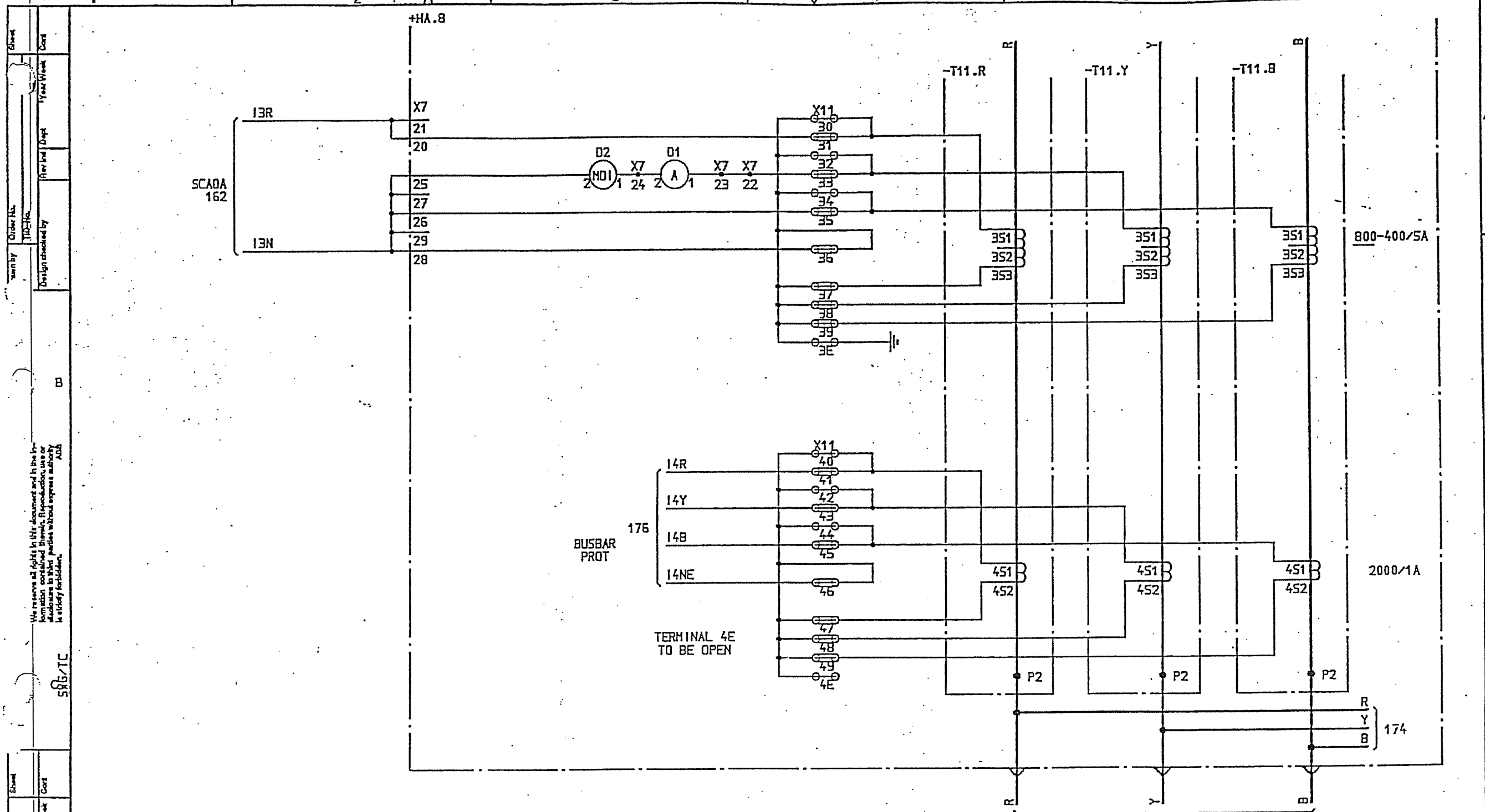
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PKL
S6/TC



SYMBOL ID /D:XL824028-FBR:180/0		DATE 91-06-04 09.07		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev Ind Sheet	
=4		33/13,8kV TRANSFORMER BAY T12		Drawing checked by L SVENSSON		S/S 8501 132/33kV		Lang Sheet	
CURRENT TRANSFORMER -T11		Drawn by PN		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		180	
AS BUILT		15 91 21		ABB HV SWITCHGEAR		TOCF 90 36		Rev Ind Sheet	
1		2		3		4		5	
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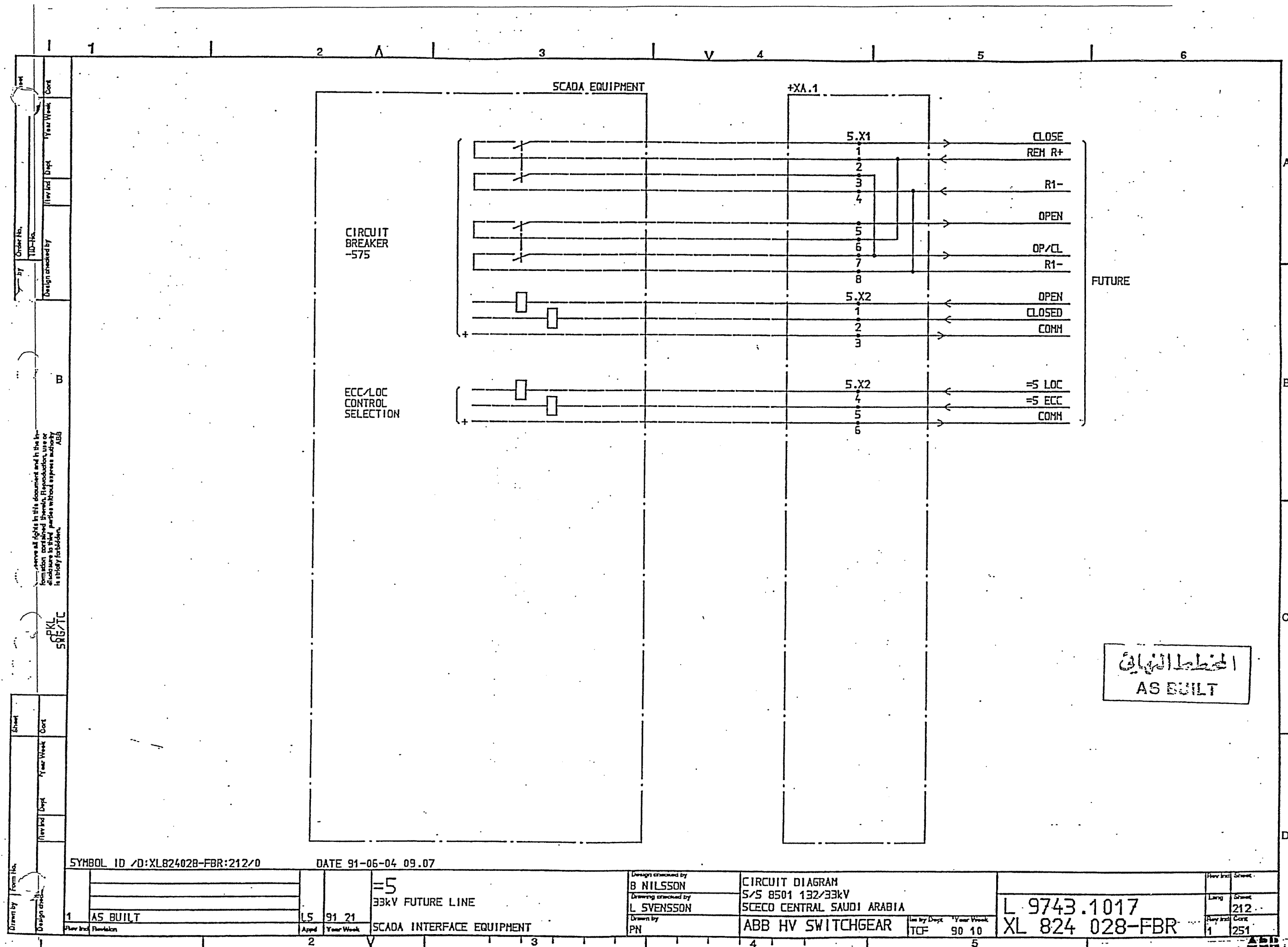
المخطط الكهربائي
AS BUILT



المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:181/0		DATE 91-06-06 12.03		Design checked by B NILSSON		CIRCUIT DIAGRAM 5/5 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		L 9743.1017	
AS BUILT		=4 33/13,8kV TRANSFORMER BAY T12		Drawing checked by L SVENSSON		ABB HV SWITCHGEAR		XL 824 028-FBR	
1		LS 91 21		CURRENT TRANSFORMER -T11		100 36		1	
2		V		PN		TOCF		212	

ABB



1		2		3		4		5		6	
Order No.		JTD-10		Design checked by		Rev		Dept		Year Week	
B		PKL		SME/TC							
Drawn by		Form		Design checked by		Rev		Dept		Year Week	
1		AS BUILT		15		91 21					
SYMBOL ID /D:XL824028-FBR:251/0		DATE 91-06-04 09.07		=6		33kV INTERCONNECTOR LINE		Design checked by		B NILSSON	
								Drawing checked by		S STRIDSHAN	
								Drawn by		IA	
								Circuit diagram		S/S 8501 132/33kV	
								SCECO CENTRAL SAUDI ARABIA		L 9743.1017	
								ABB HV SWITCHGEAR		XL 824 028-FBR	
								Rev		Sheet	
								1		254	
								1		254	

ITEM	DESIGNATION	SHEET
+RB.4	HEATING AND LIGHTING RELAY CUBICLE	254
	VOLTAGE DISTRIBUTION RELAY CUBICLE	255
+XA.1	SCADA INTERFACE EQUIPMENT	262
+HA.9	AUX. VOLTAGE SUPPLY	265
	HEATING AND LIGHTING	266
	C.B. OPERATION CIRCUITS	268
-575	CIRCUIT BREAKER EQUIPMENT	269
	INTERLOCKING	273
-571	EARTH SWITCH EQUIPMENT	274
	TRIP RELAYS	278
-T11	CURRENT TRANSFORMER	280
+RB.4	DISTANCE PROTECTION	282
	AUTO RECLOSE RELAY	285
	OVERCURRENT AND EARTH FAULT PROT	287

الخطة النهائية
AS BUILT

Drawn by	Form	Design checked by	Rev	Dept	Year Week	SYMBOL ID /D:XL824028-FBR:251/0	DATE 91-06-04 09.07	=6	33kV INTERCONNECTOR LINE	Design checked by	B NILSSON	Circuit diagram	S/S 8501 132/33kV	SCECO CENTRAL SAUDI ARABIA	L 9743.1017	XL 824 028-FBR	Rev	Sheet
1	AS BUILT	15	91 21						LIST OF CONTENTS	Drawn by	IA	ABB HV SWITCHGEAR	Rev	Sheet	1	254	1	254

ITEM	DESIGNATION	SHEET
+XA.1	SCADA INTERFACE EQUIPMENT	362
+HA.12	AUX. VOLTAGE SUPPLY	365
	HEATING AND LIGHTING	366
	C.B. OPERATION CIRCUITS	368
-875	CIRCUIT BREAKER EQUIPMENT	369
	INTERLOCKING	373
-871	EARTH SWITCH EQUIPMENT	374
	TRANSFORMER DIFFERENTIAL PROT	377
	OVERCURRENT PROT	378
-T11	CURRENT TRANSFORMER	380

المخطط النهائي
AS BUILT

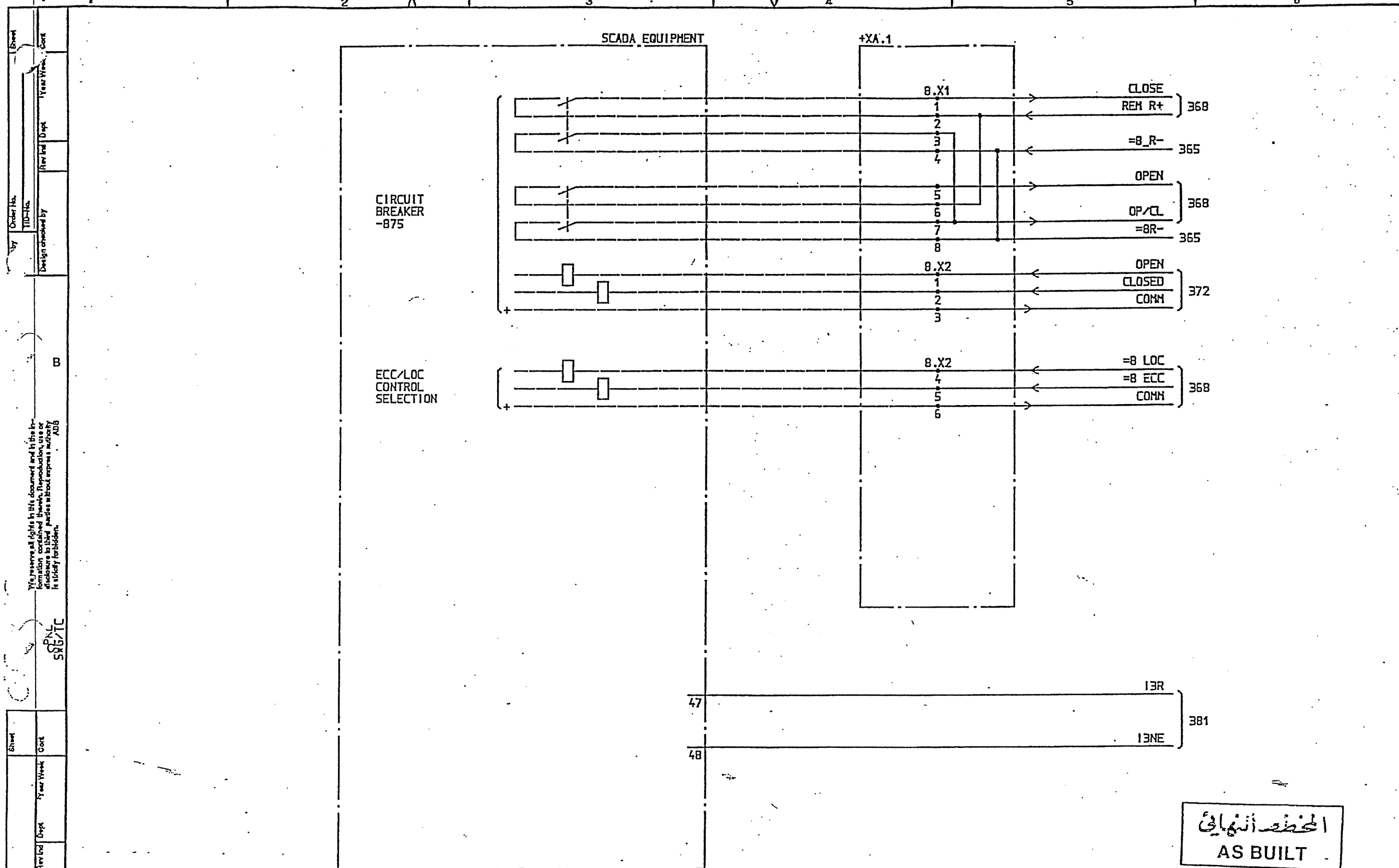
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1 AS BUILT Appd Rev 1		LS 91 21 Year Week LIST OF CONTENTS		=8 33/13,8kV TRANSFORMER BAY T13		TCF 90 10 Year Week		1 351 Rev Sheet			

ITEM	DESIGNATION	SHEET
+XA.1	SCADA INTERFACE EQUIPMENT	362
+HA.12	AUX. VOLTAGE SUPPLY	365
	HEATING AND LIGHTING	366
	C.B. OPERATION CIRCUITS	368
-875	CIRCUIT BREAKER EQUIPMENT	369
	INTERLOCKING	373
-871	EARTH SWITCH EQUIPMENT	374
	TRANSFORMER DIFFERENTIAL PROT	377
	OVERCURRENT PROT	378
-T11	CURRENT TRANSFORMER	380

المخطط النهائي
AS BUILT

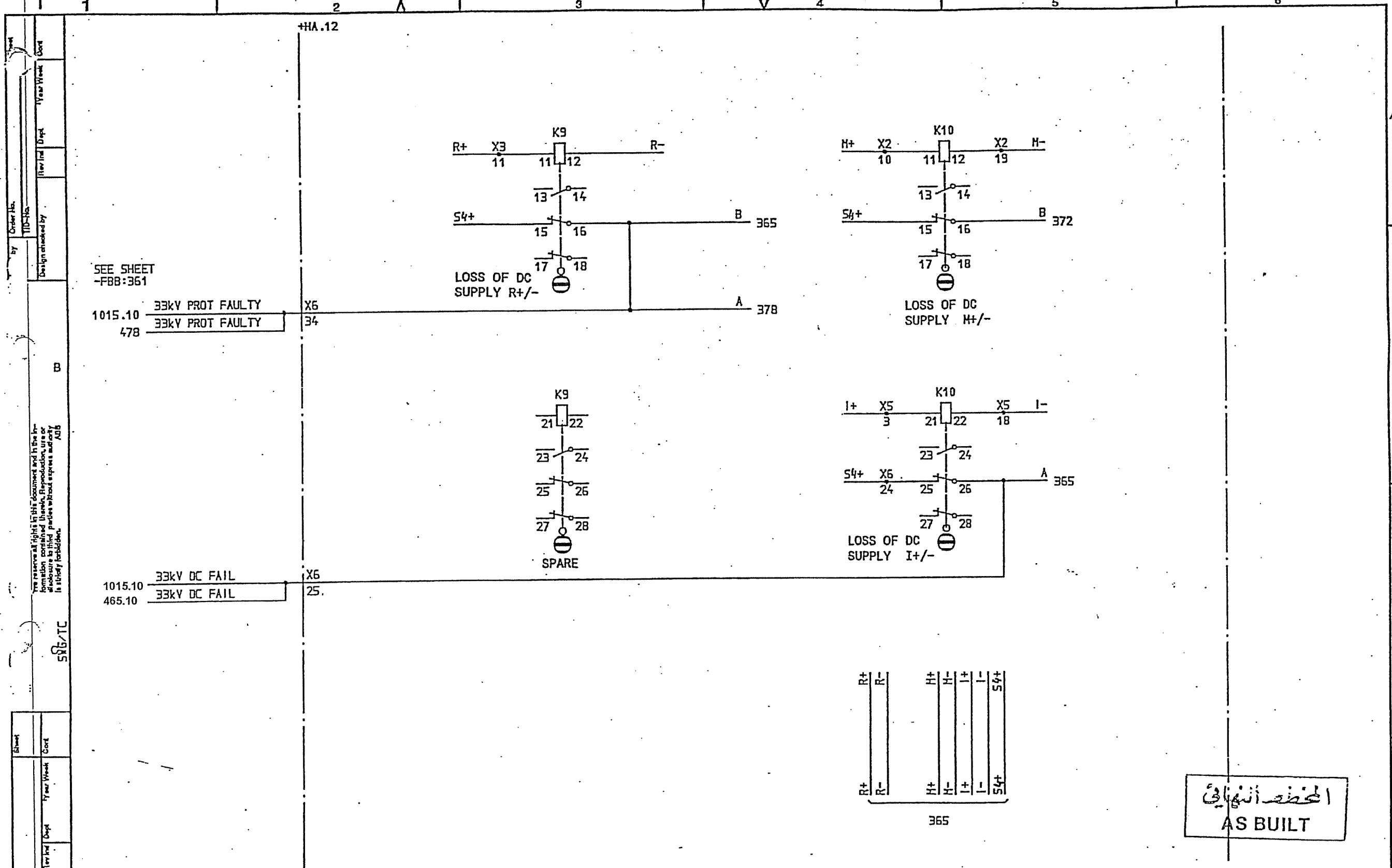
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AS BUILT		15 91 21		=8 33/13,8kV TRANSFORMER BAY T13		SCECO CENTRAL SAUDI ARABIA		ABB HV SWITCHGEAR		TCF		90 10		361		362			
LIST OF CONTENTS																			

ABB
ASB



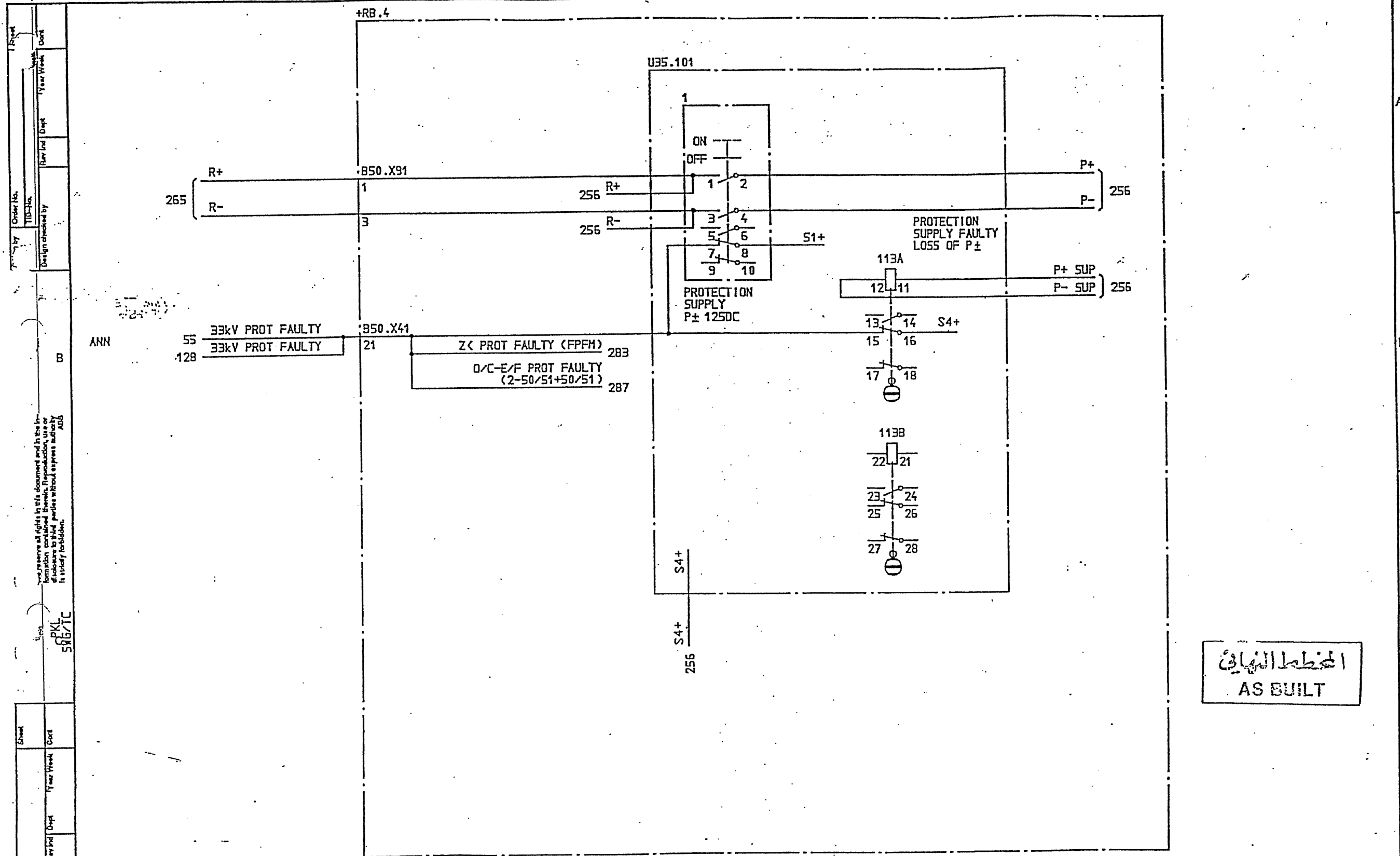
المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:362/0		DATE 91-06-04 09.09		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV		Rev Int Sheet	
Drawing checked by S STRIDSMAN		Drawing checked by S STRIDSMAN		SCECO CENTRAL SAUDI ARABIA		L:9743.1017		Long Sheet	
Drawn by IA		Drawn by IA		ABB HV SWITCHGEAR		XL 824 028-FBR		Rev Int Sheet	
1 AS BUILT		LS 91 21		33/13,8kV TRANSFORMER BAY T13		TCF 90 10		1 362	
Rev Int Revision		Appd Year Work		SCADA INTERFACE EQUIPMENT				1 365	



المحطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:365.10/0		DATE 91-06-04 09.09		Design checked by B NILSSON		CIRCUIT DIAGRAM		How Incl. Sheet	
=8		33/13,8kV TRANSFORMER BAY T13		Drawing checked by L SVENSSON		S/S 8501 132/33kV		Long	Sheet
1		AS BUILT		Drawn by SK		ABB HV SWITCHGEAR		How Incl. Corr.	1 - 366
Appd		Year Week		TDCP		90 36		L 9743.1017	
2		V		5		XL 824 028-FBR		365.10	



SYMBOL ID /D:XL824028-FBR:255/0

DATE 91-06-04 09.07

1	AS BUILT	15	91 21
Rev Ind	Revision	Appd	Year Week

=6
33kV INTERCONNECTOR LINE
PROTECTION SUPPLY
VOLTAGE DISTRIBUTION

Design checked by
B NILSSON
Drawing checked by
J SKOVGAARD
Drawn by
IA

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA

Iss by Dept
TOCF 90 16

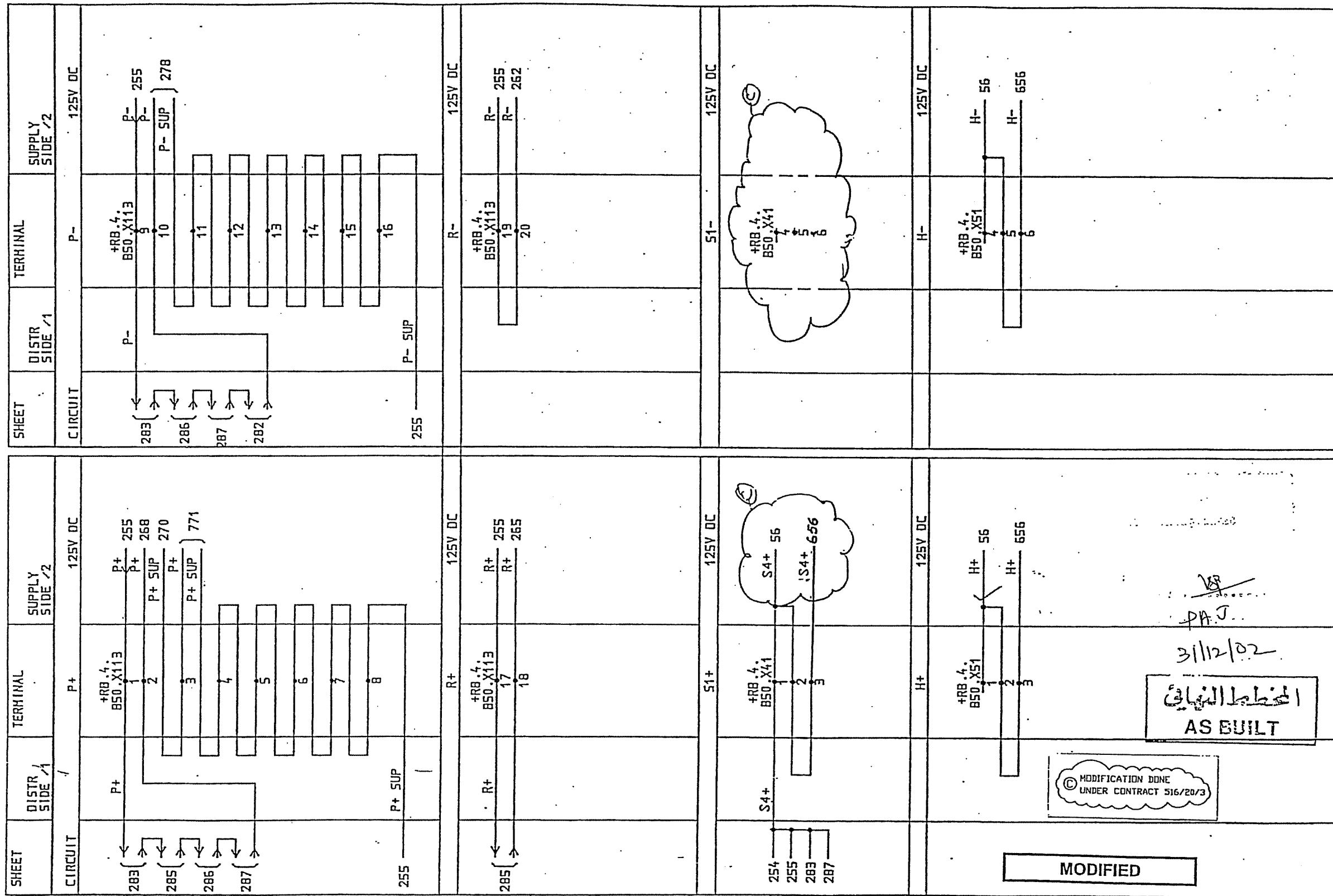
L 9743.1017
XL 824 028-FBR

Rev Ind	Sheet
Long	Sheet
Rev Ind	Sheet
1	255
	256

ABD
FBR

[illegible]

Order No.	Year Week	Cont	Order No.	Year Week	Cont
PKL 506/TC					
Design checked by	Year Week	Cont	Design checked by	Year Week	Cont
SYMBOL ID /D:XL824028-FBR:256/0	DATE 91-06-04 09.07				
AS BUILT	LS 91 21				
=6 33kV INTERCONNECTOR LINE PROTECTION AND ALARM SUPPLY VOLTAGE DISTRIBUTION			CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		
Design created by B NILSSON			Design checked by J SKOVGAARD		
Drawn by 1A			Issued by Dept TDCF		
			Year Week 90 16		
			L 9743.1017 XL 824 028-FBR		
			Flow sheet Lang Sheet 256		
			Flow sheet Lang Sheet 262		



MODIFICATION DONE
UNDER CONTRACT 516/20/3

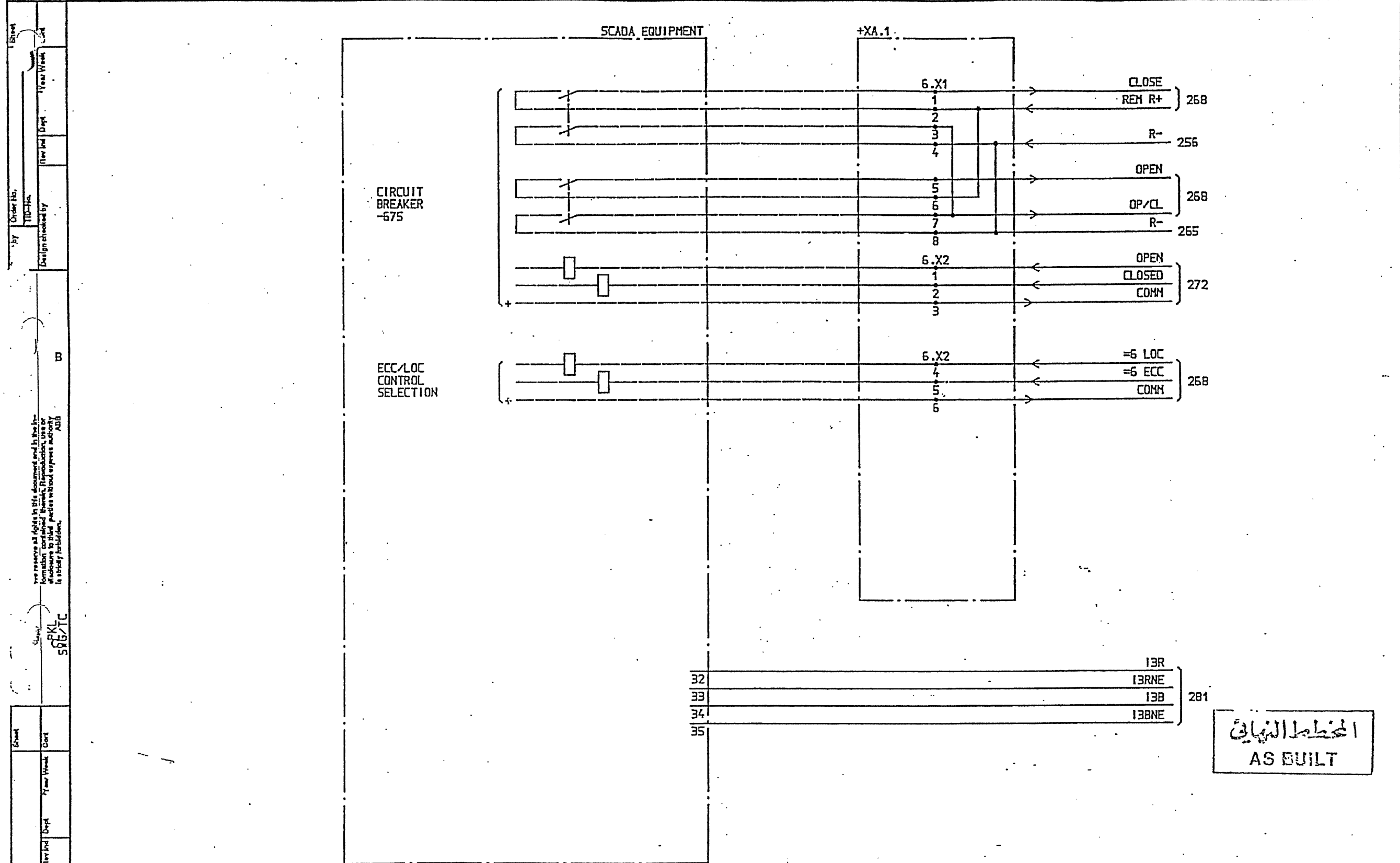
المخطط النهائي
AS BUILT

3/11/02

PAJ

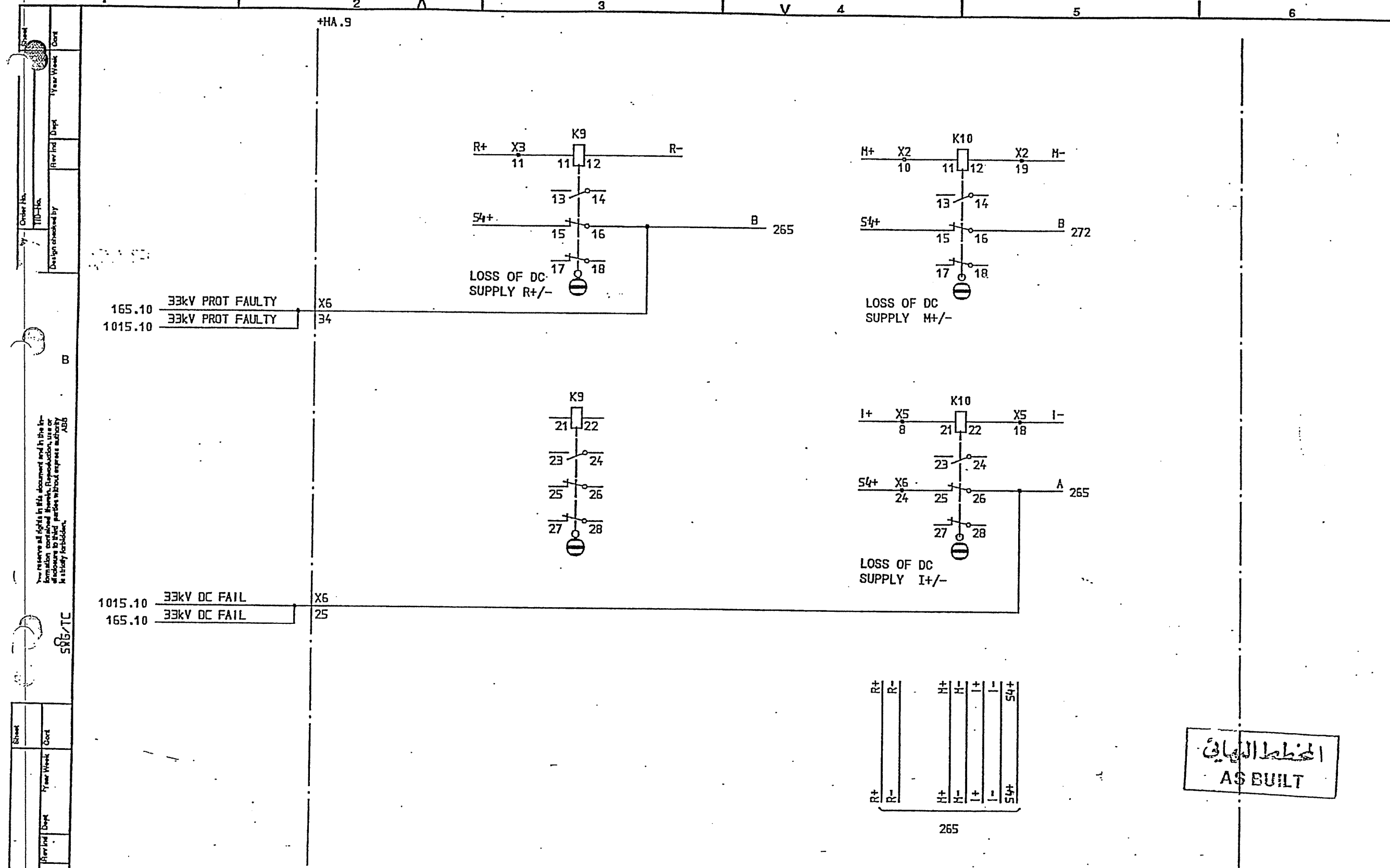
MODIFIED

ABB

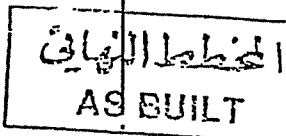


الخطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:262/0		DATE 91-05-04 09.07		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		Rev Int Sheet	
=6 33kV INTERCONNECTOR LINE		Drawing checked by S STRIDSMAN		Drawn by 1A		ABB HV SWITCHGEAR TCF 90 10		L 9743.1017 XL 824 028-FBR	
1 AS BUILT		LS 91 21		SCADA INTERFACE EQUIPMENT				Lang Sheet 1 262	
Rev Int Revision		Aspd Year Week						Rev Int Sheet 1 265	



SYMBOL ID /D:XL824028-FBR:265.10/0		DATE 91-06-04 09.07		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		Rev Ind Sheet	
=6 33kV INTERCONNECTOR LINE		Drawing checked by L SVENSSON		Line by Dept TDCF		Year Week 90 36		Lang	Sheet
1 AS BUILT		Appd LS 91 21		SK		ABB HV SWITCHGEAR		1	265.10
Rev Ind Revision		2		V		XL 824 028-FBR		1	265

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Order No.	Sheet
TID No.	Year Week
Design checked by	Year Week

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SNB/TC

Drawn by	Sheet
Design No.	Year Week
Year Week	Year Week

SYMBOL ID /D:XL824028-FBR:268.10/0

DATE 91-06-04 09.07

1	AS BUILT	LS	91 21
Year Week	Year Week	Year Week	Year Week

=6
33kV INTERCONNECTOR LINE
PROTECTION
TRIP CIRCUIT

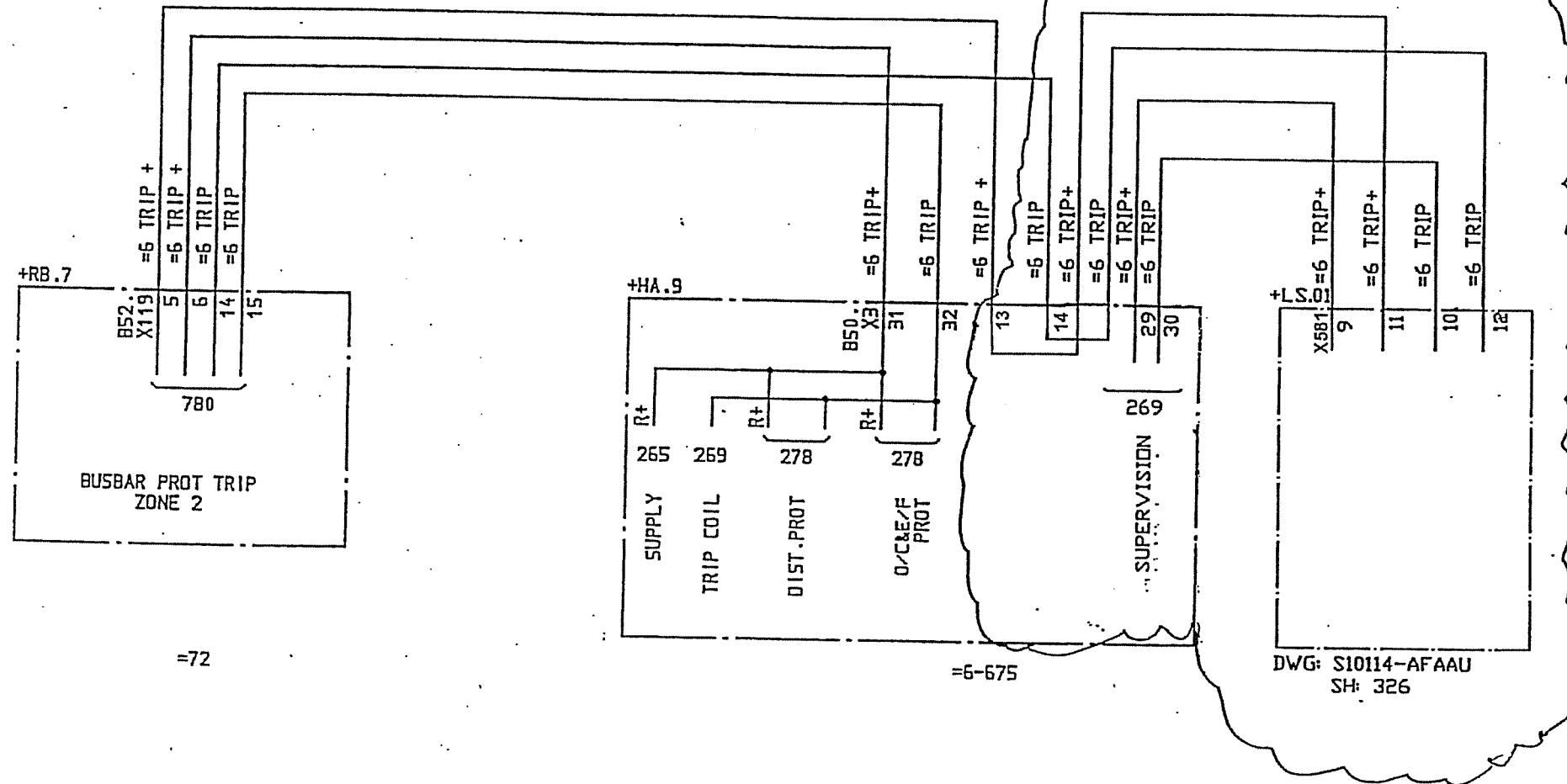
Design checked by
B NILSSON
Drawing checked by
L SYENSSON
Drawn by
SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Issued by	Year Week
TDCF	90 35

L 9743.1017
XL 824 028-FBR

Year Week	Year Week
268.10	269

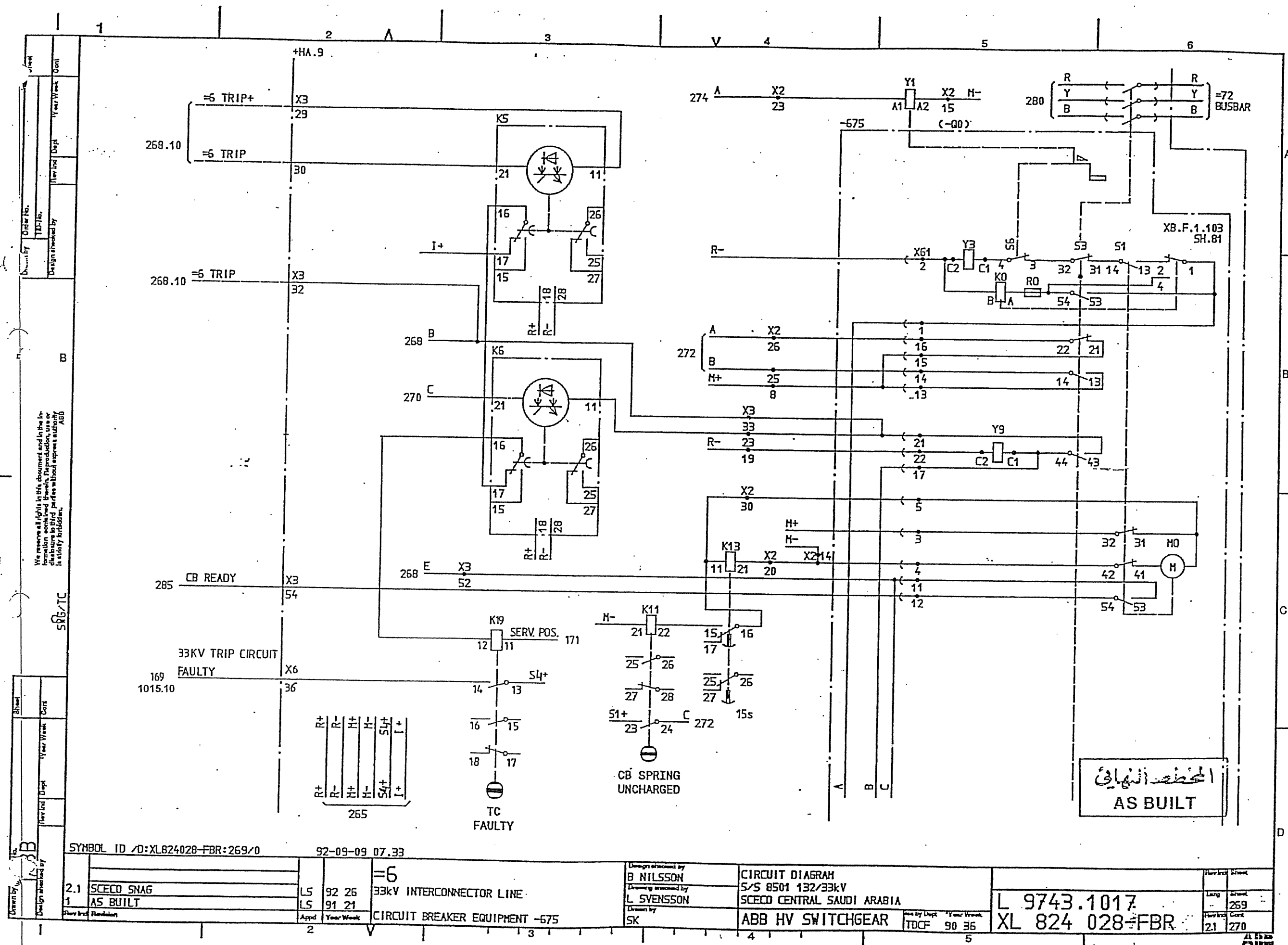


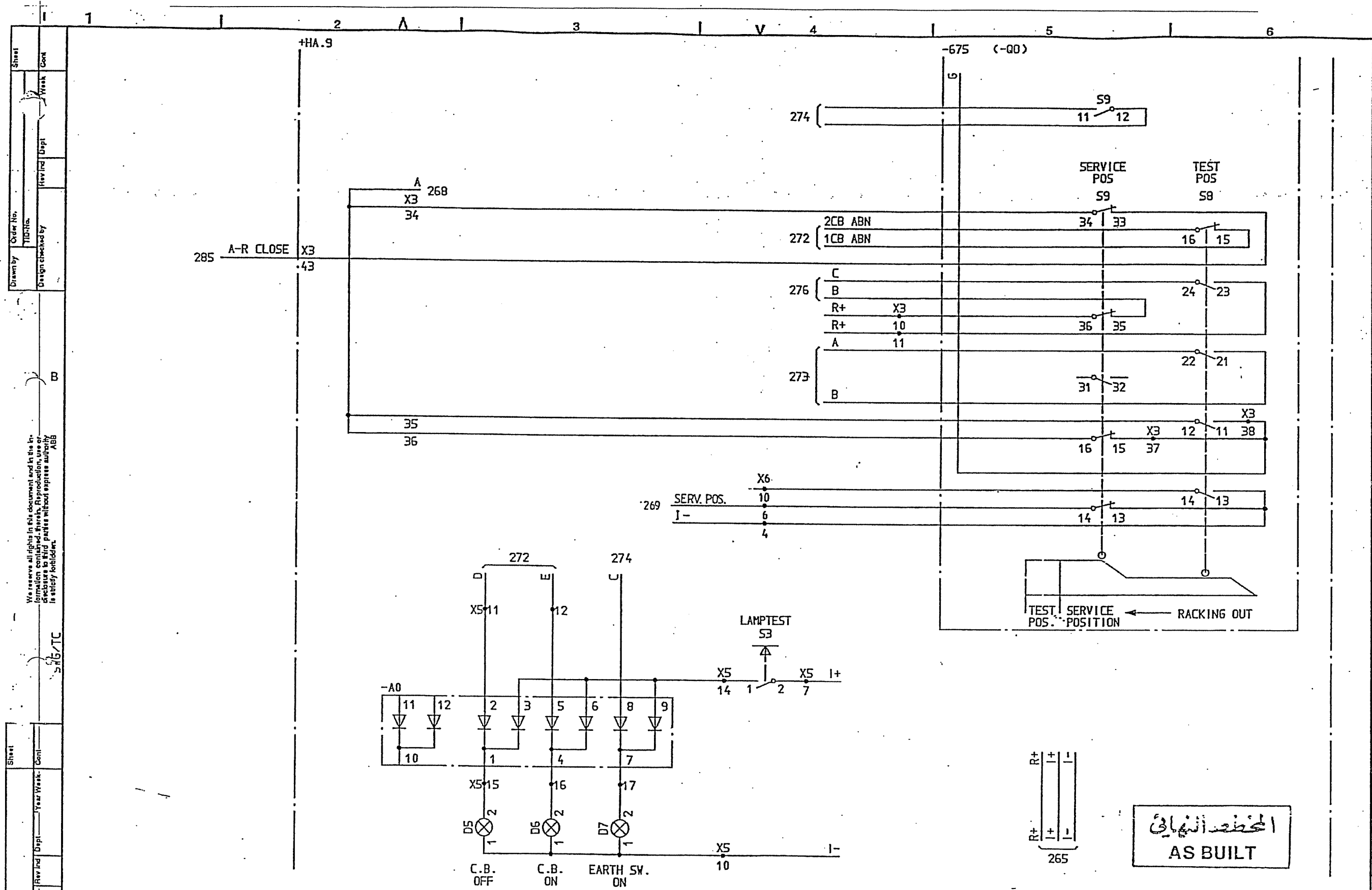
© MODIFICATION DONE
UNDER CONTRACT S16/20/3

المخطط النهائي
AS BUILT

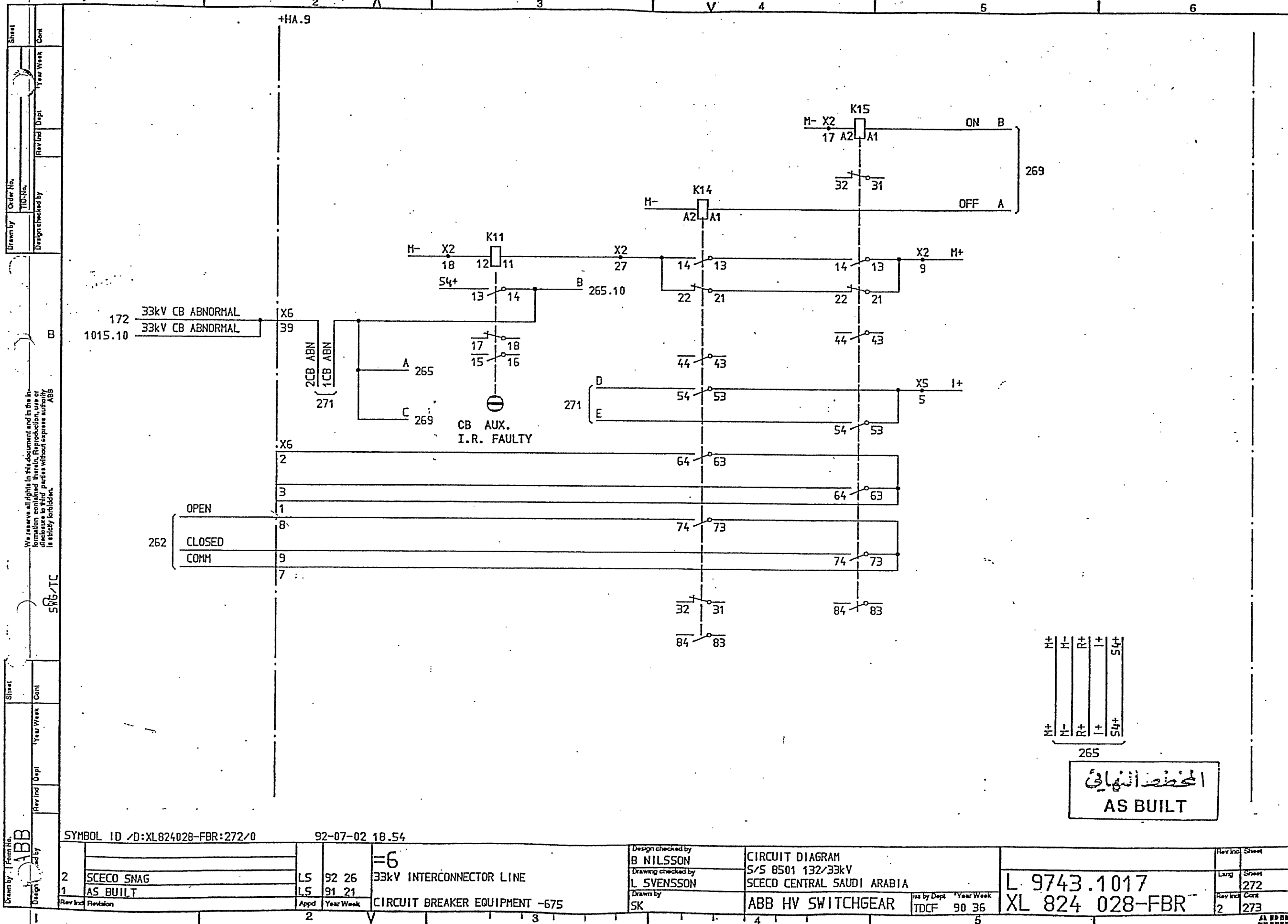
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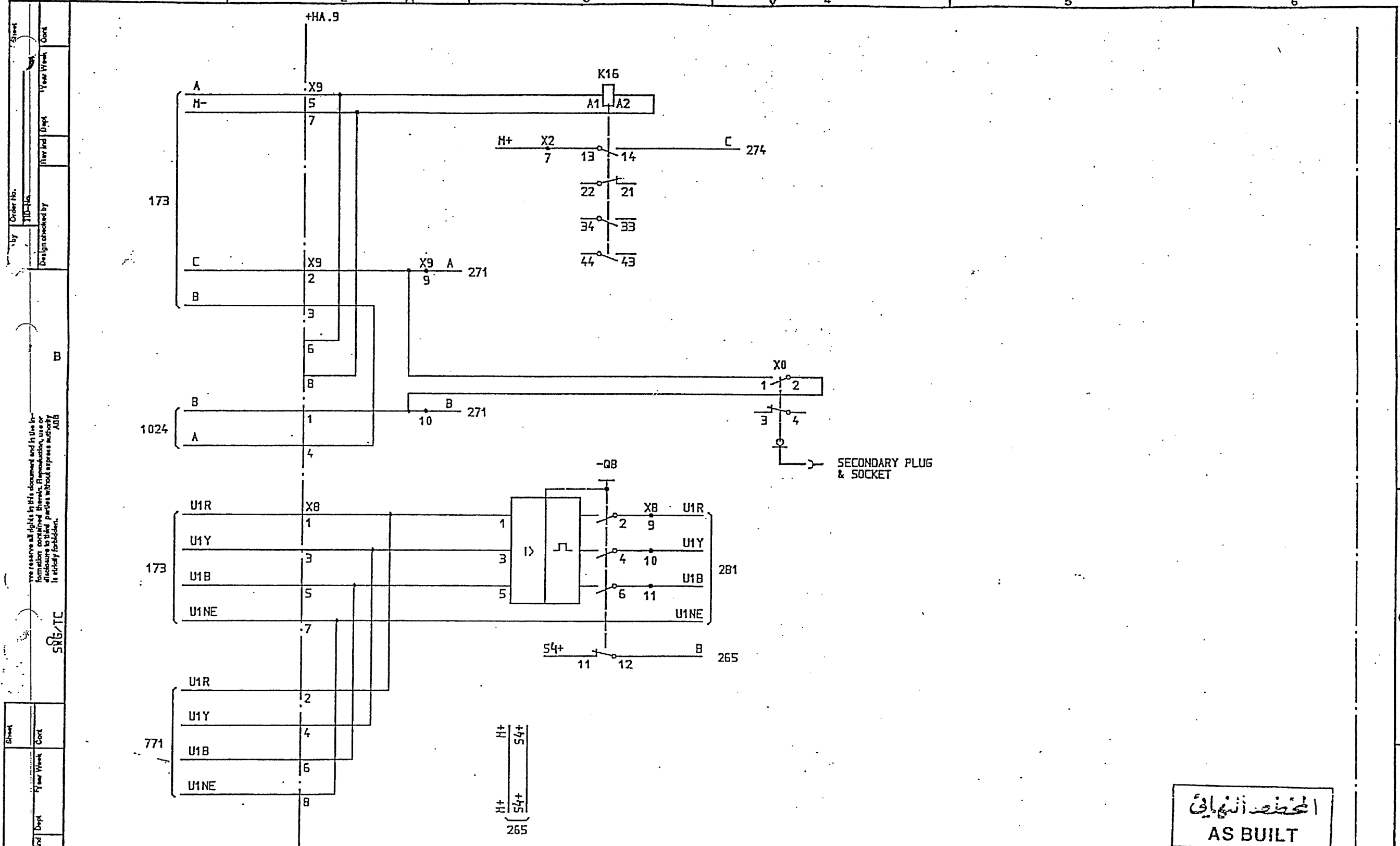
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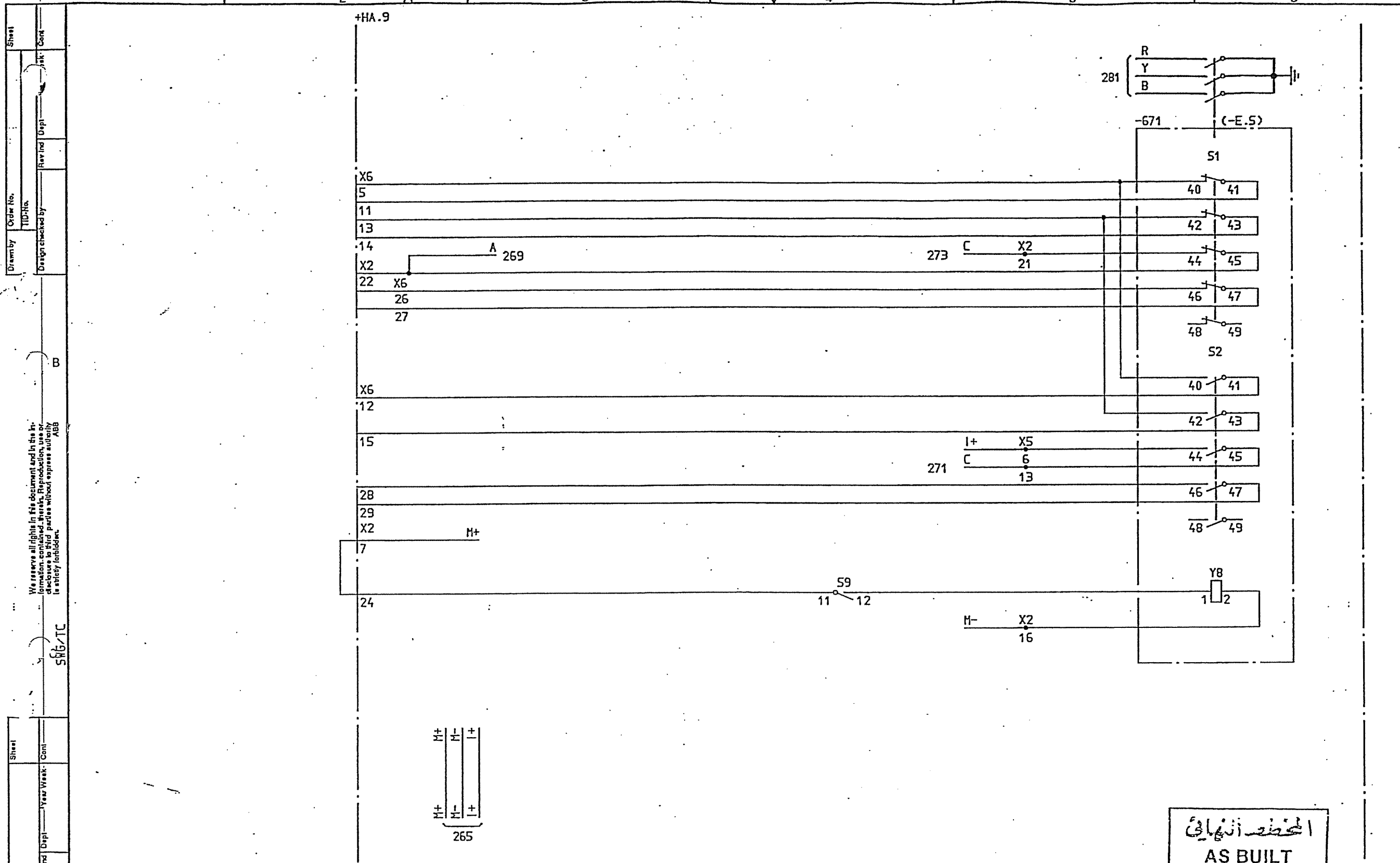


SYMBOL ID /D:XL824028-FBR:271/0		92-07-02 18.54		=6		33kV INTERCONNECTOR LINE		CIRCUIT DIAGRAM		S/S 8501 132/33kV		L 9743.1017		XL 824 028-FBR		2.1 272	
2.1 SCECO SNA6		LS 92 26		=6		33kV INTERCONNECTOR LINE		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		XL 824 028-FBR		2.1 272	
1 AS BUILT		LS 91 21		CIRCUIT BREAKER EQUIPMENT -675		ABB HV SWITCHGEAR		TDCF 90 36									





SYMBOL ID /D:XL824028-FBR:273/0		DATE 91-06-06 12.05		CIRCUIT DIAGRAM		L 9743.1017	
=6		33kV INTERCONNECTOR LINE		S/S 8501 132/33kV		XL 824 028-FBR	
AS BUILT		INTERLOCKING RELAY FOR C.B. TRUCK		SCECO CENTRAL SAUDI ARABIA		ABB HV SWITCHGEAR	
L5 91 21		Appd Year Week		TDCF 90 36		1 274	
1		2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
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81		82		83		84	
85		86		87		88	
89		90		91		92	
93		94		95		96	
97		98		99		100	



المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:274/0

92-07-02 18.54

2	SCECO SNAG	LS	92 26	=6	33kV INTERCONNECTOR LINE
1	AS BUILT	LS	91 21		
		Appd	Year Week		EARTH SWITCH EQUIPMENT -671

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

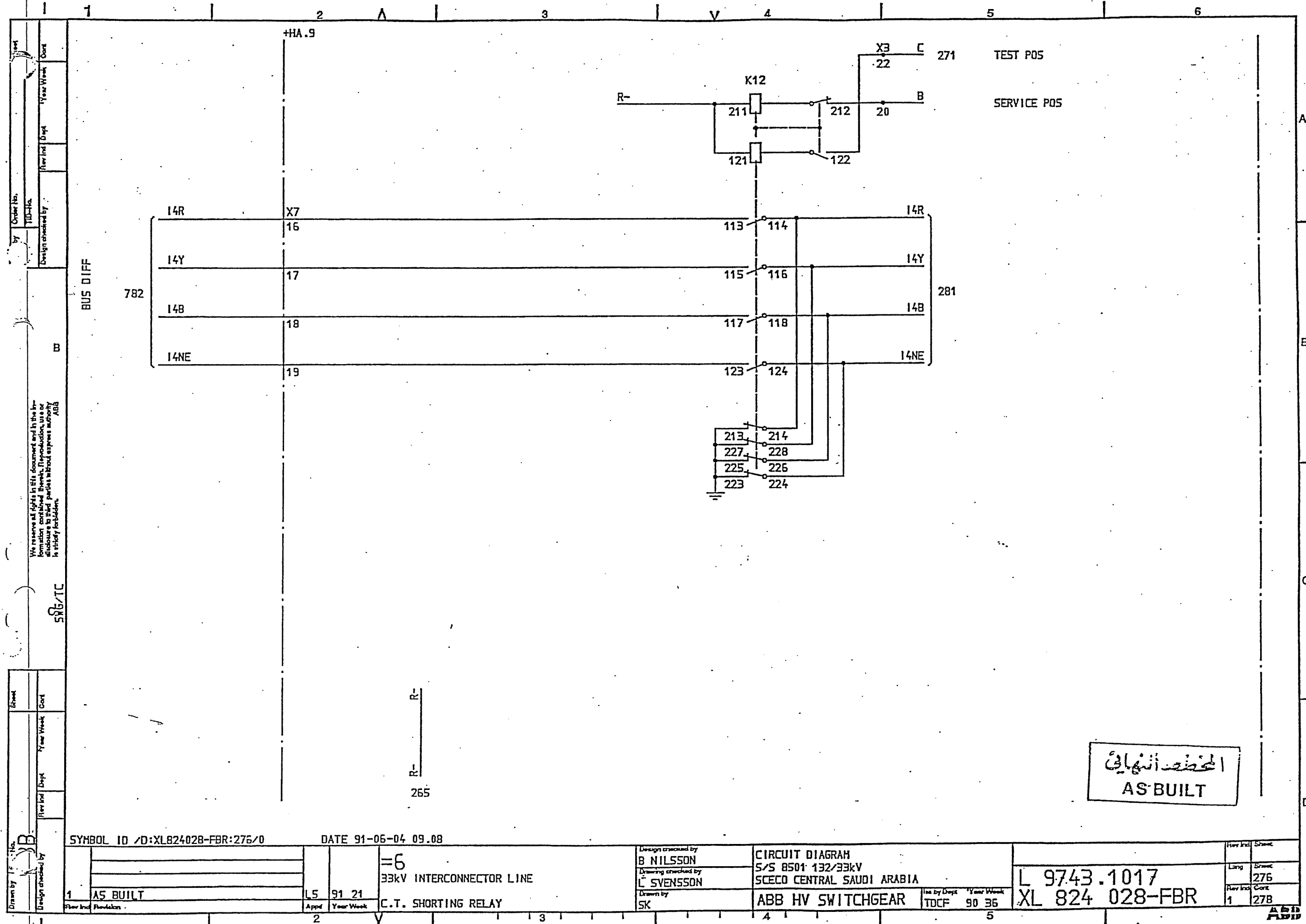
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

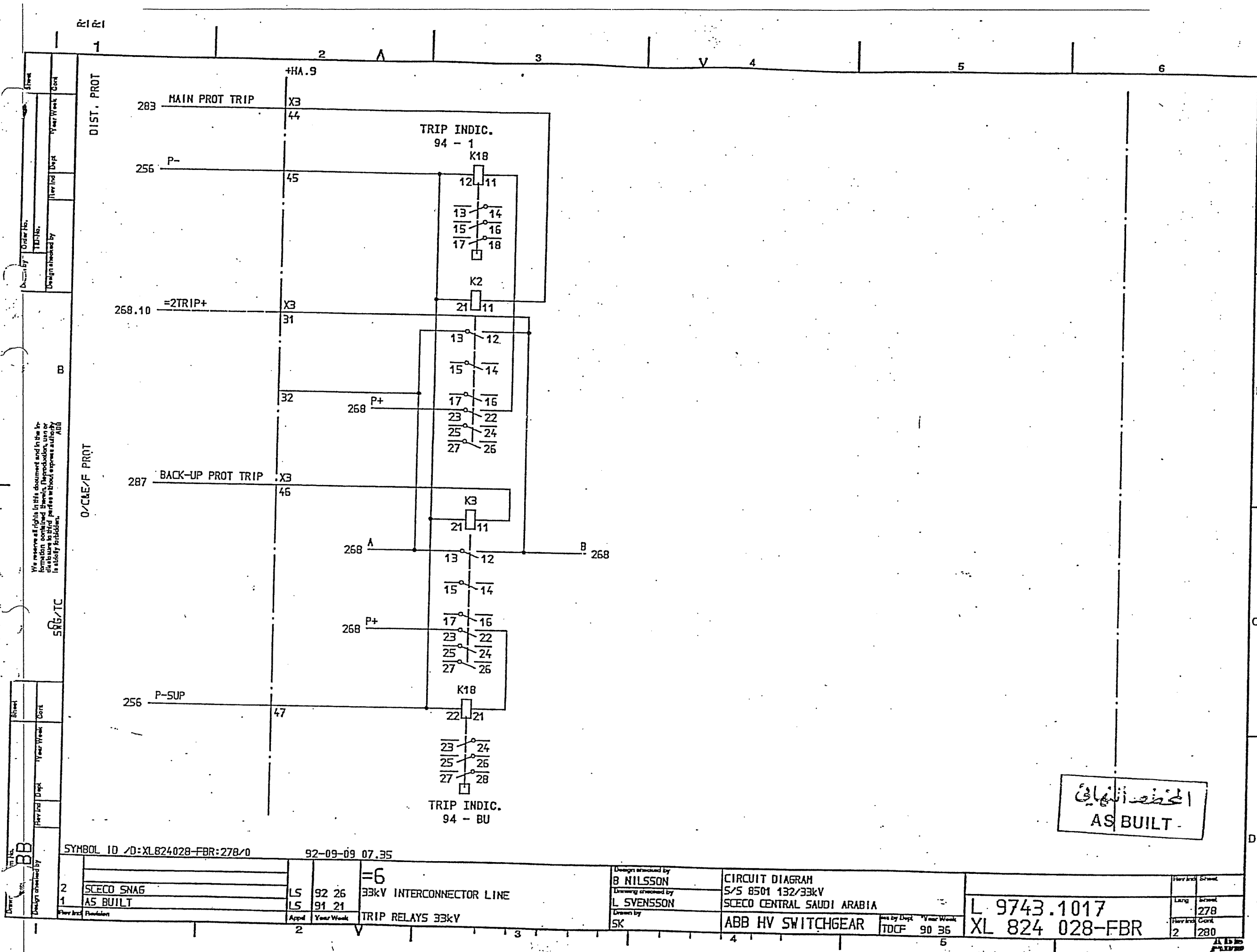
Iss by Dept
TDCF 90 36

L 9743.1017
XL 824.028-FBR

Rev Ind	Sheet
Long	Sheet
Rev Ind	Cont
2	276

AS BUILT





المحطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:278/0

92-09-09 07.35

2	LS	92 26	=6
1	LS	91 21	33kV INTERCONNECTOR LINE
			TRIP RELAYS 33kV

Design checked by
B NILSSON
Drawing checked by
L SYENSSON
Drawn by
SK

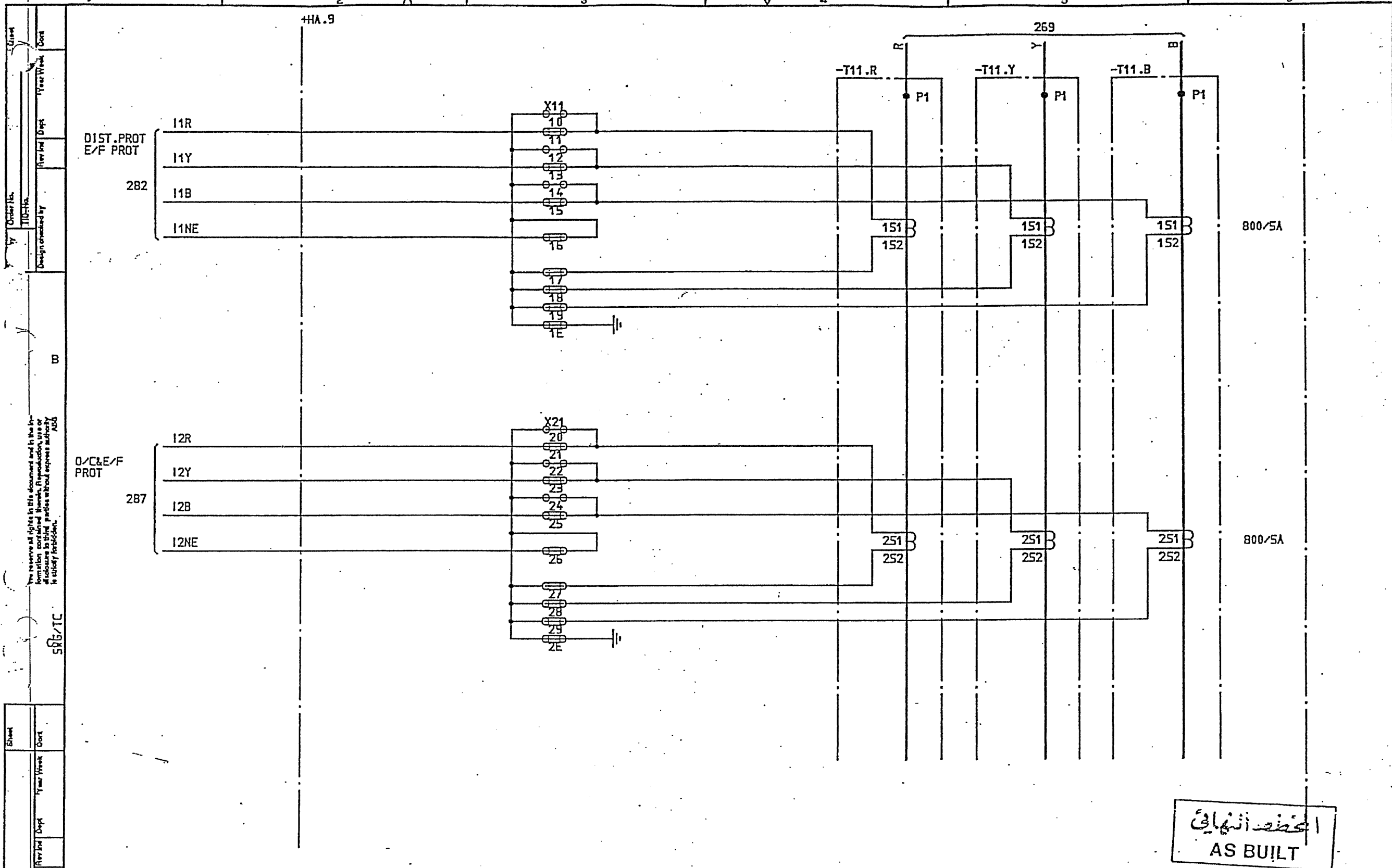
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept Year Week
TDCF 90 36 5

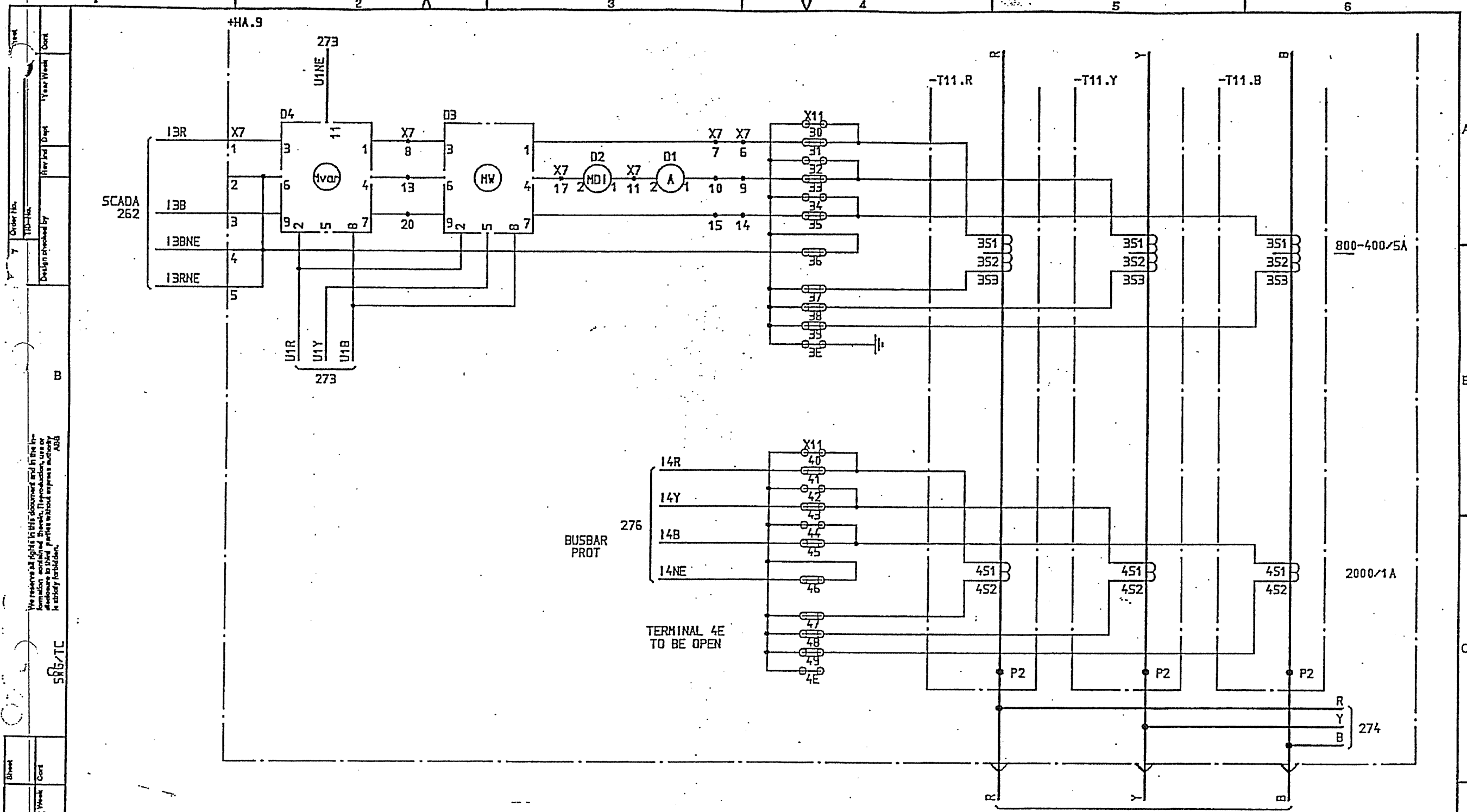
L 9743.1017
XL 824 028-FBR

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Lung	278
Drawn by	Sheet
2	280

AS BUILT

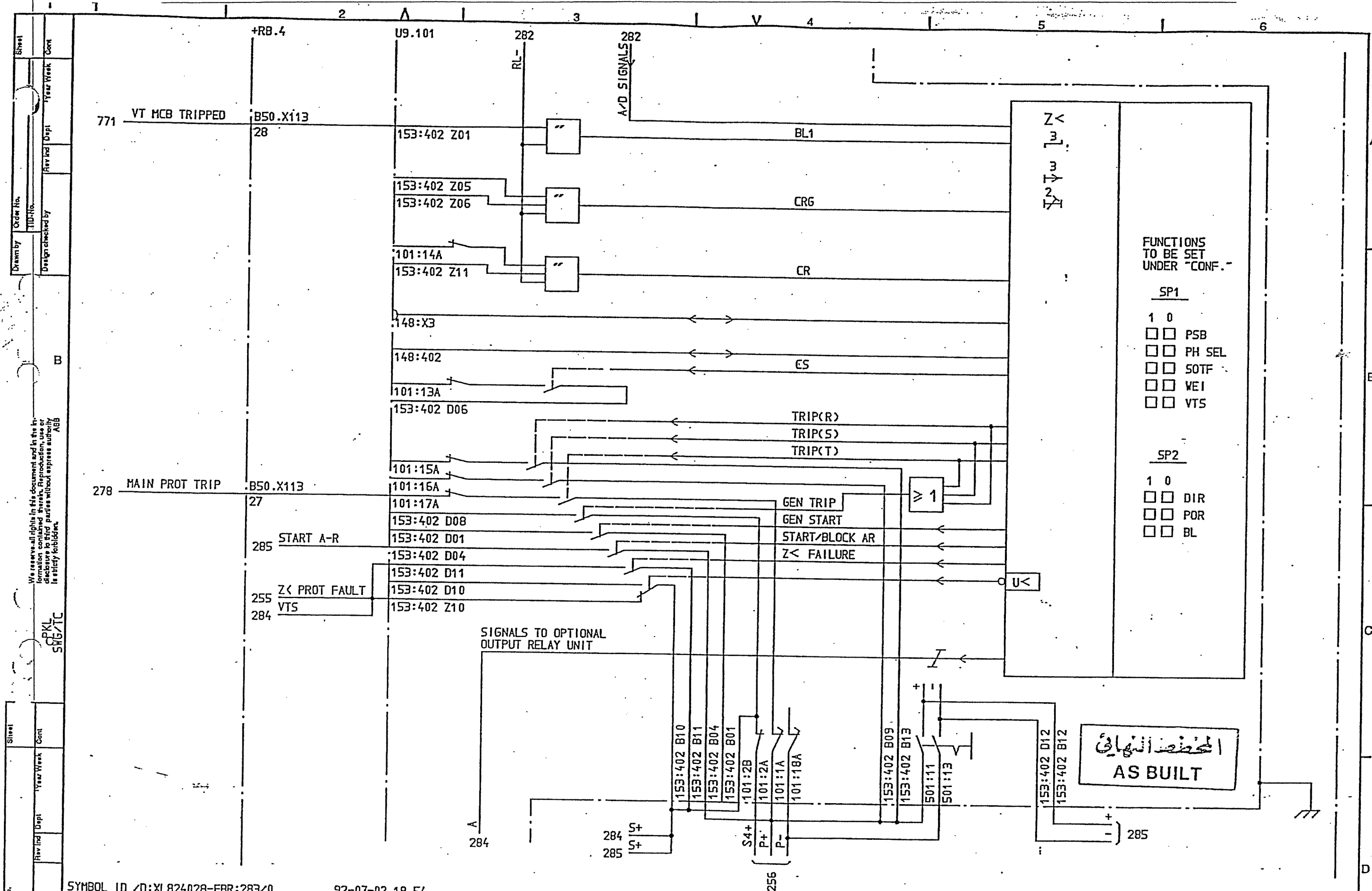


SYMBOL ID /D:XL824028-FBR:280/0		DATE 91-06-06 12.07		=6		33kV INTERCONNECTOR LINE		CIRCUIT DIAGRAM		L 9743.1017	
AS BUILT		L5 91 21		CURRENT TRANSFORMER -T11		ABB HV SWITCHGEAR		S/S 8501 132/33KV		XL 824 028-FBR	
DESIGNED BY		DESIGNED BY		DESIGNED BY		DESIGNED BY		DESIGNED BY		DESIGNED BY	
B NILSSON		L SVENSSON		SK		TOCF		90 36		1 281	



المحطة النهائية
AS BUILT

SYMBOL ID / D:XL824028-FBR:281/0		DATE 91-06-06.12.07		=6 33kV INTERCONNECTOR LINE		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		L 9743.1017	
AS BUILT		L5 91 21		CURRENT TRANSFORMER -T11		ABB HV SWITCHGEAR		XL 824 028-FBR	
1		2		3		4		5	
Drawn by		Design checked by		Design checked by		Design checked by		Design checked by	
B		B NILSSON		L SVENSSON		SK		TOCF 90 36	
Sheet		Year Week		Year Week		Year Week		Year Week	
1		1		1		1		1	
281		281		281		281		281	
282		282		282		282		282	



FUNCTIONS
TO BE SET
UNDER "CONF."

SP1

- 1 0
- ☐ PSB
 - ☐ PH SEL
 - ☐ SOTF
 - ☐ WEI
 - ☐ VTS

SP2

- 1 0
- ☐ DIR
 - ☐ POR
 - ☐ BL

المحطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:283/0

92-07-02 18.54

2	SCECO SNAG	LS	92 26	=6	33kV INTERCONNECTOR LINE
1	AS BUILT	LS	91 21		
Rev	Inc	Rev	Inc	Appd	Year Week
2					

DISTANCE PROTECTION

Design checked by
B NILSSON
Drawing checked by
J SKOVGAARD
Drawn by
IA

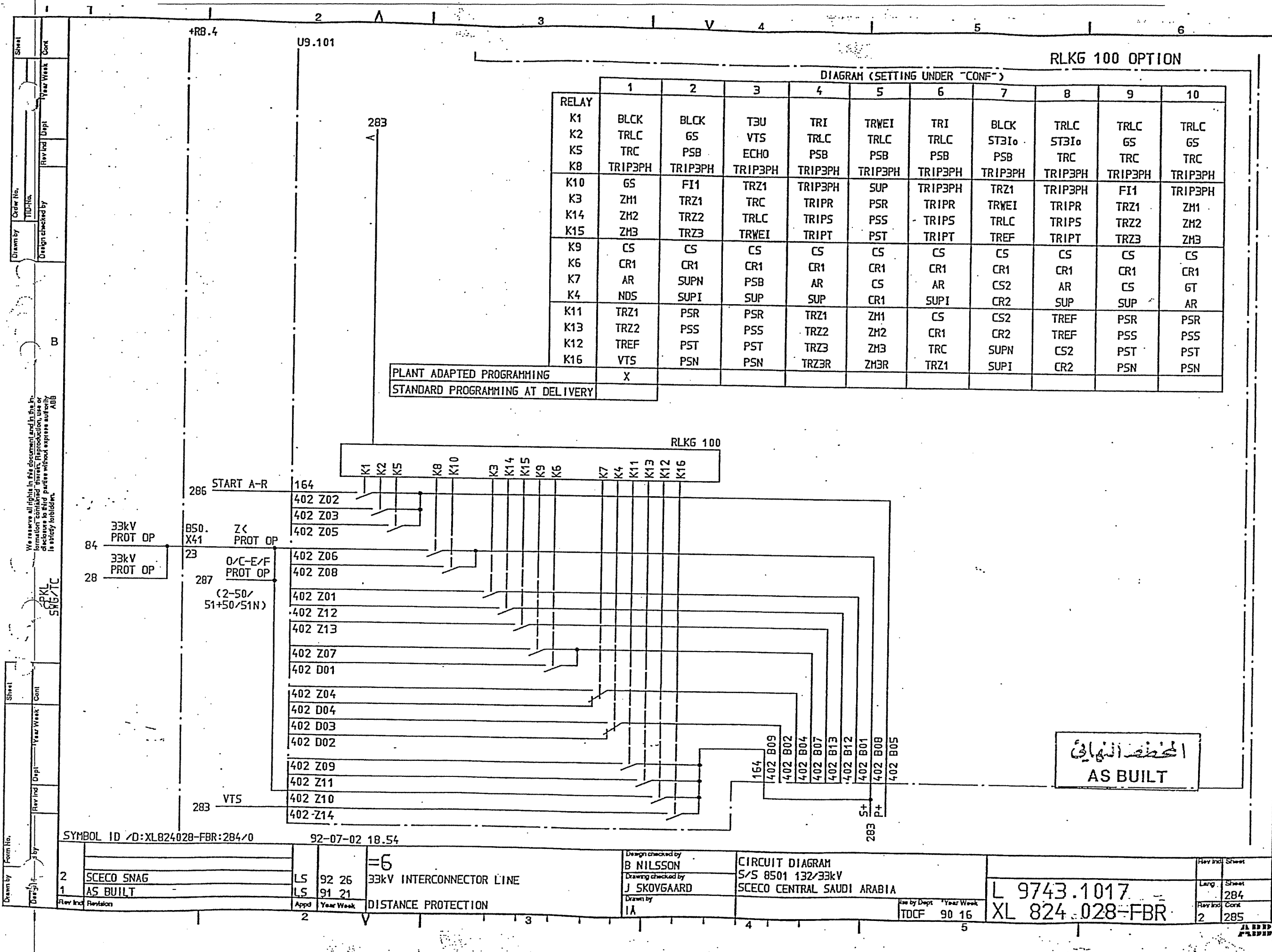
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA

Iss by Dept
TDCF 90 16

L 9743.1017
XL 824 028-FBR

Rev	Inc	Rev	Inc	Appd	Year Week
2					

AL HAD
PASAD



RLKG 100 OPTION										
DIAGRAM (SETTING UNDER "CONF")										
RELAY	1	2	3	4	5	6	7	8	9	10
K1	BLCK	BLCK	T3U	TRI	TRWEI	TRI	BLCK	TRLC	TRLC	TRLC
K2	TRLC	GS	VT5	TRLC	TRLC	TRLC	ST3Io	ST3Io	GS	GS
K5	TRC	PSB	ECHO	PSB	PSB	PSB	PSB	TRC	TRC	TRC
K8	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH	TRIP3PH
K10	GS	FI1	TRZ1	TRIP3PH	SUP	TRIP3PH	TRZ1	TRIP3PH	FI1	TRIP3PH
K3	ZM1	TRZ1	TRC	TRIPR	PSR	TRIPR	TRWEI	TRIPR	TRZ1	ZM1
K14	ZM2	TRZ2	TRLC	TRIPS	PSS	TRIP5	TRLC	TRIP5	TRZ2	ZM2
K15	ZM3	TRZ3	TRWEI	TRIPT	PST	TRIPT	TREF	TRIPT	TRZ3	ZM3
K9	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
K6	CR1	CR1	CR1	CR1	CR1	CR1	CR1	CR1	CR1	CR1
K7	AR	SUPN	PSB	AR	CS	AR	CS2	AR	CS	GT
K4	NDS	SUPI	SUP	SUP	CR1	SUPI	CR2	SUP	SUP	AR
K11	TRZ1	PSR	PSR	TRZ1	ZM1	CS	CS2	TREF	PSR	PSR
K13	TRZ2	PSS	PSS	TRZ2	ZM2	CR1	CR2	TREF	PSS	PSS
K12	TREF	PST	PST	TRZ3	ZM3	TRC	SUPN	CS2	PST	PST
K16	VT5	PSN	PSN	TRZ3R	ZM3R	TRZ1	SUPI	CR2	PSN	PSN

PLANT ADAPTED PROGRAMMING
STANDARD PROGRAMMING AT DELIVERY

المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:284/0

92-07-02 18.54

2	SCECO SNAG	LS	92 26	=6	33kV INTERCONNECTOR LINE
1	AS BUILT	LS	91 21		DISTANCE PROTECTION

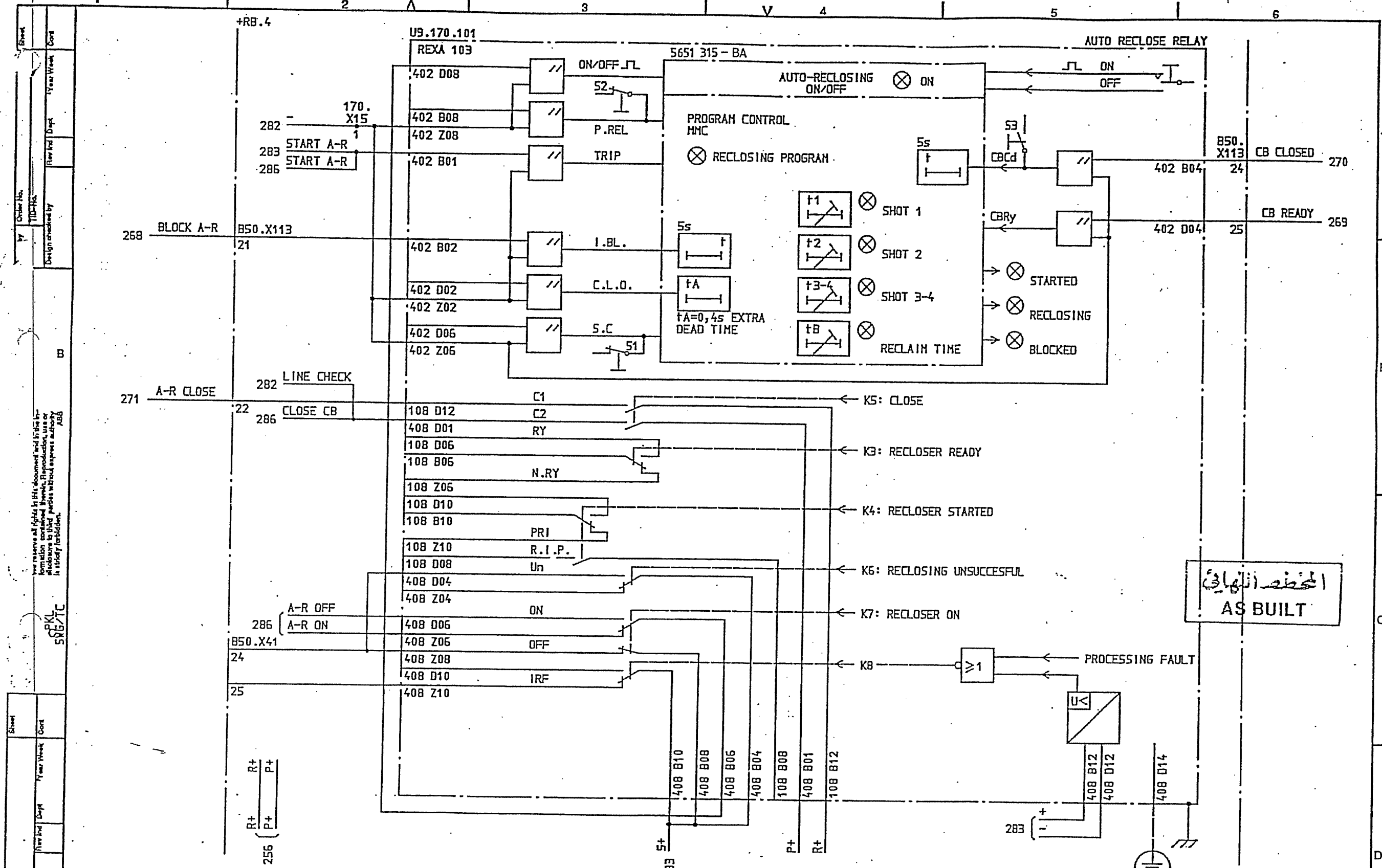
Design checked by
B NILSSON
Drawing checked by
J SKOVGAARD
Drawn by
IA

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA

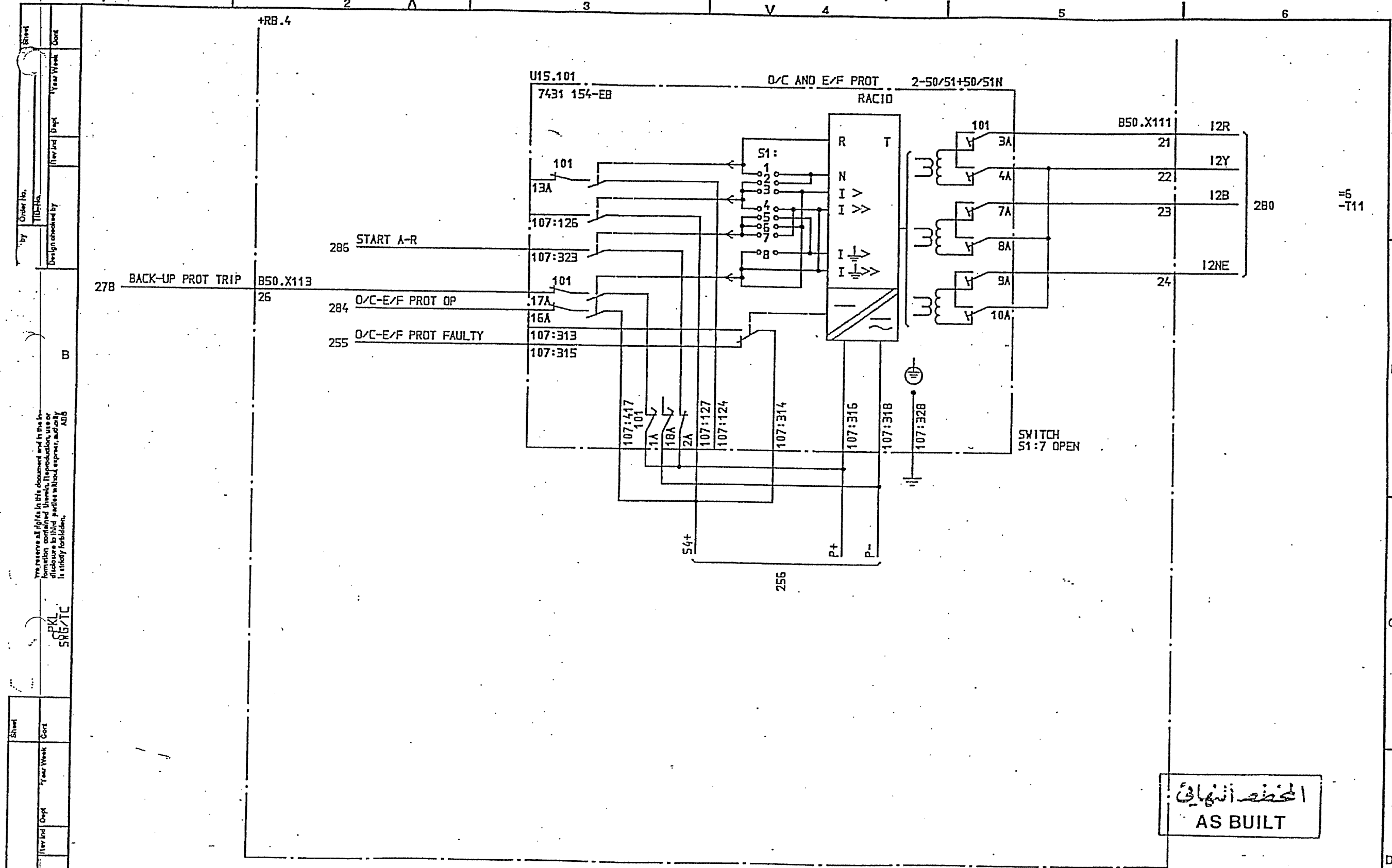
Use by Dept Year Week
TDCF 90 16

L 9743.1017
XL 824.028-FBR

Rev Ind	Sheet
Larg	Sheet
Rev Ind	Cont
2	285

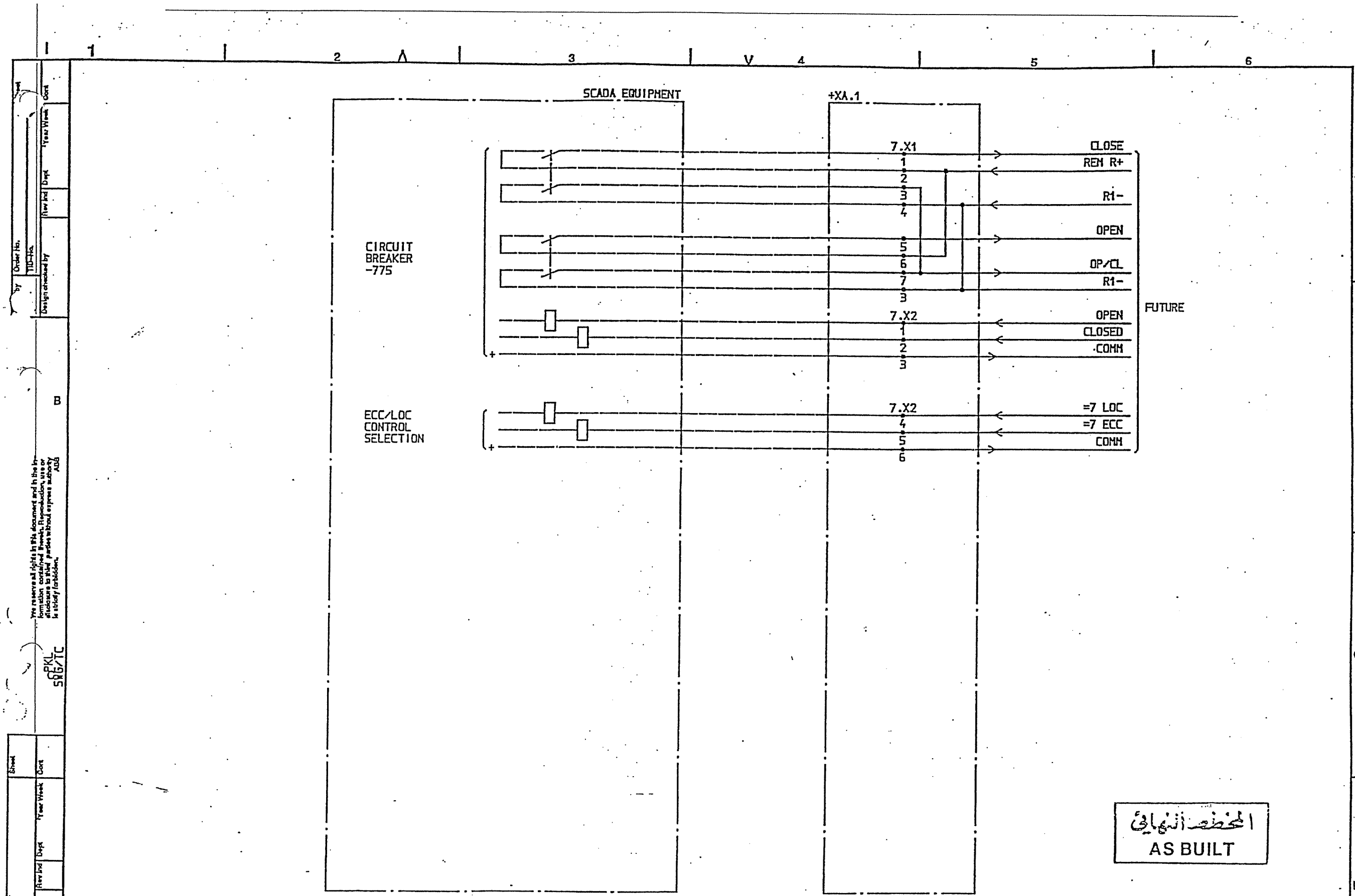


SYMBOL ID /D:XL824028-FBR:285/0		DATE 91-06-04 09.08		=6		33kV INTERCONNECTOR LINE		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		XL 824 028-FBR	
AS BUILT		LS 91 21		AUTO RECLOSE RELAY		B NILSSON		J SKOVGAARD		IA		TDCF 90 15		1		285	
1		2		3		4		5		6		7		8		9	



المحطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:287/0		DATE 91-06-04 09.08			
1 AS BUILT		L5 91 21		=6 33kV INTERCONNECTOR LINE	
OVERCURRENT AND EARTH FAULT		Design checked by B NILSSON		CIRCUIT DIAGRAM	
		Drawing checked by J SKOVGAARD		S/S 8501 132/33kV	
		Drawn by IA		SCECO CENTRAL SAUDI ARABIA	
				L 9743.1017	
				XL 824 028-FBR	
				1 312	

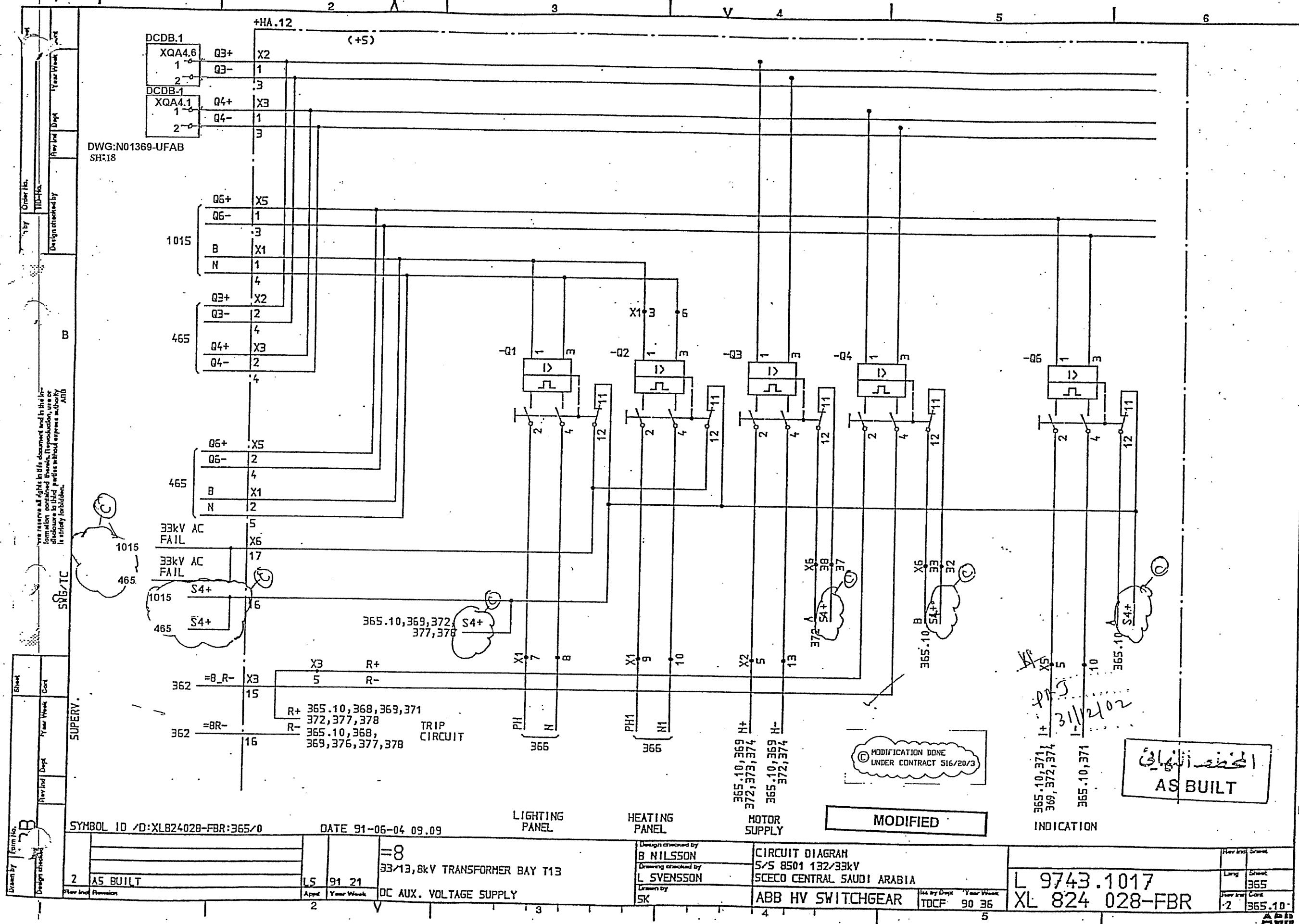


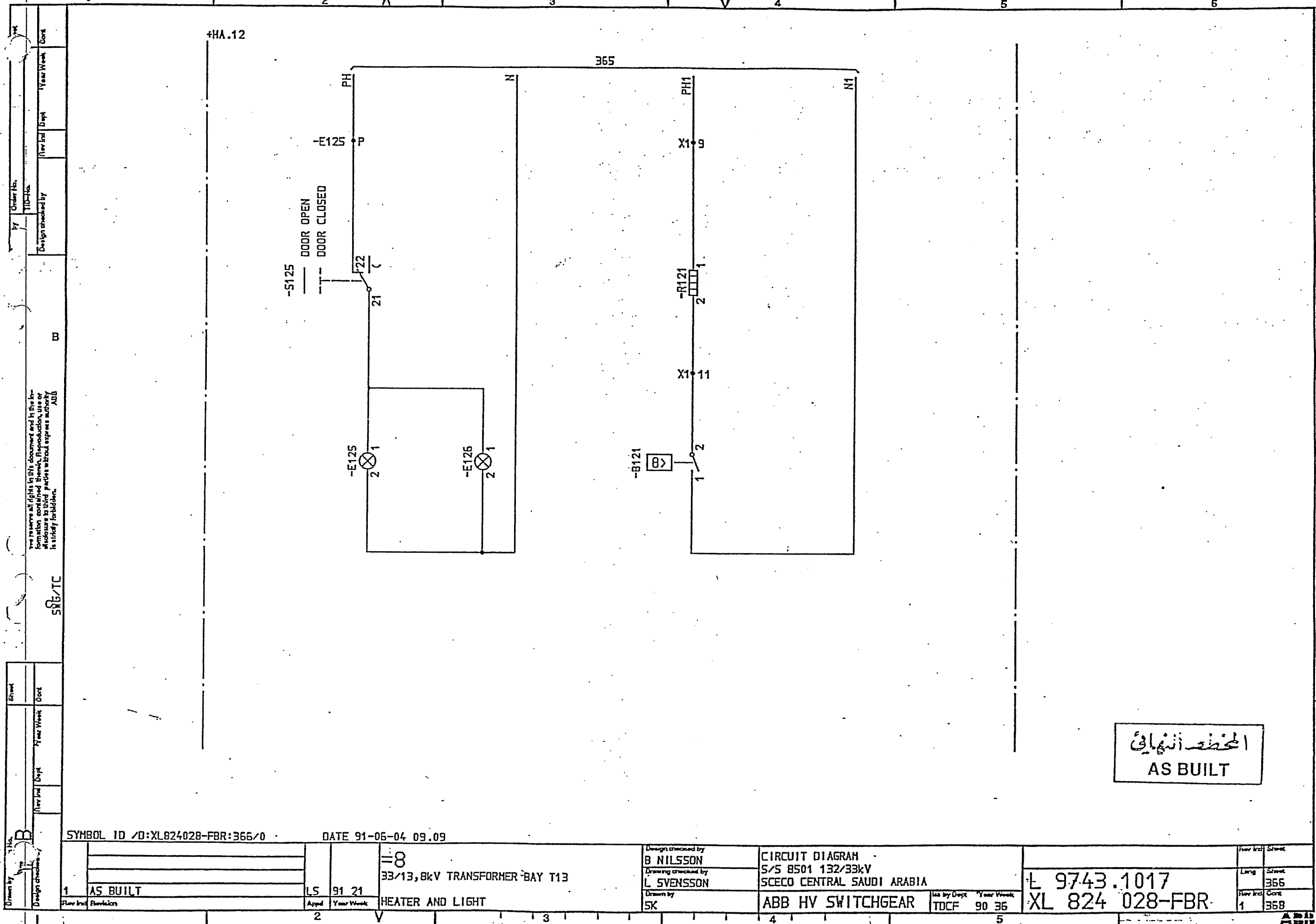
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AS BUILT

SYMBOL ID /D:XL824028-FBR:312/0

DATE 91-06-04 .09.08

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				33kV FUTURE LINE		Drawing checked by S STRIDSHAN		S/S 8501 132/33kV		Lang Sheet	
1	AS BUILT	LS	91 21	SCADA INTERFACE EQUIPMENT		Drawn by IA		SCECO CENTRAL SAUDI ARABIA		L 9743.1017	
Rev Int Revisions		Appl Year Week				ABB HV SWITCHGEAR		Iss by Dept TCF	Year Week 90 10	XL 824 028-FBR	
		2						5		1 351	





المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:366/0

DATE 91-06-04 09.09

1	AS BUILT	LS	91 21
Rev Ind	Revision	Appd	Year Week

33/13.8kV TRANSFORMER BAY T13
HEATER AND LIGHT

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

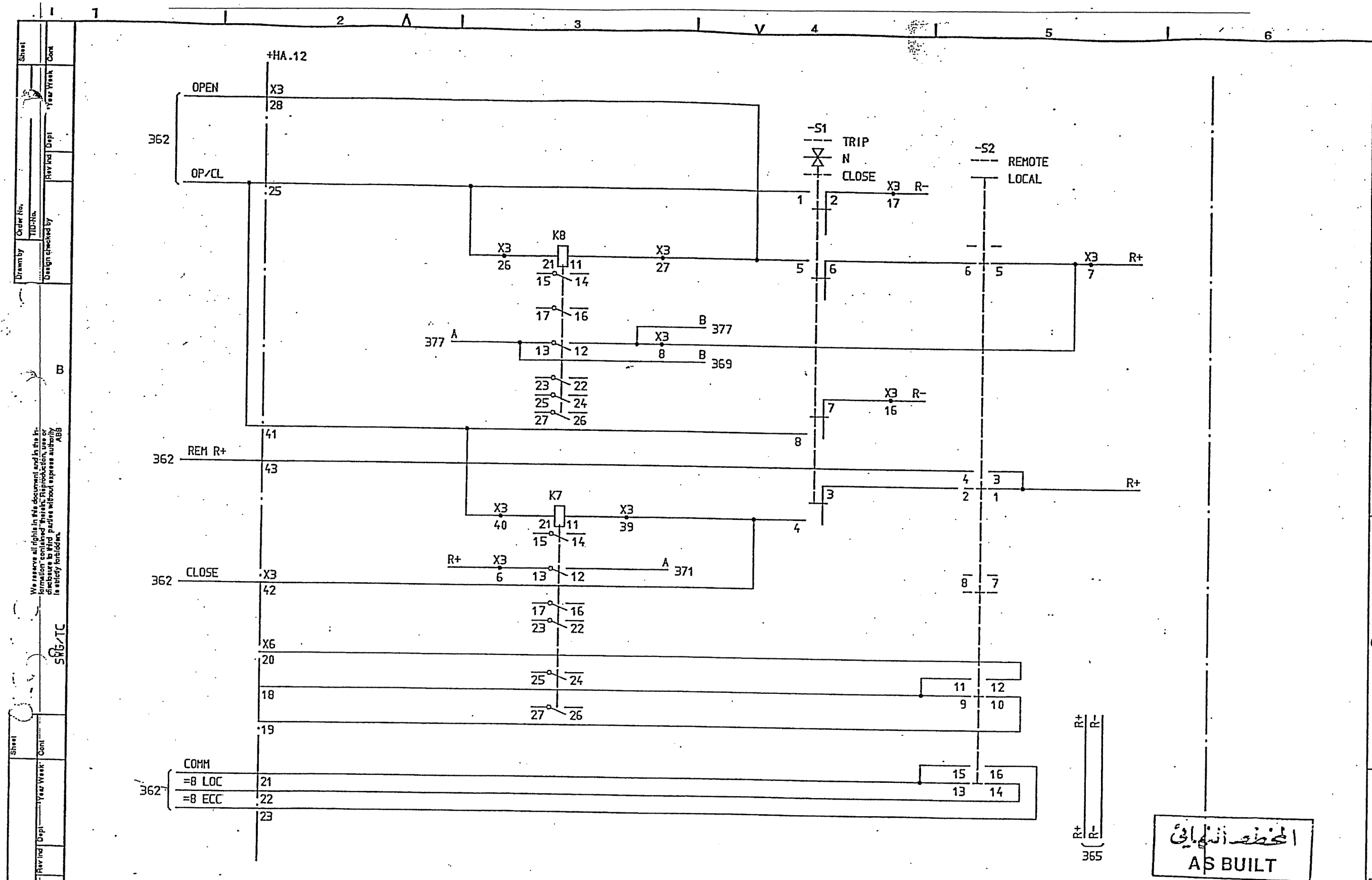
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S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TDCF 90 36

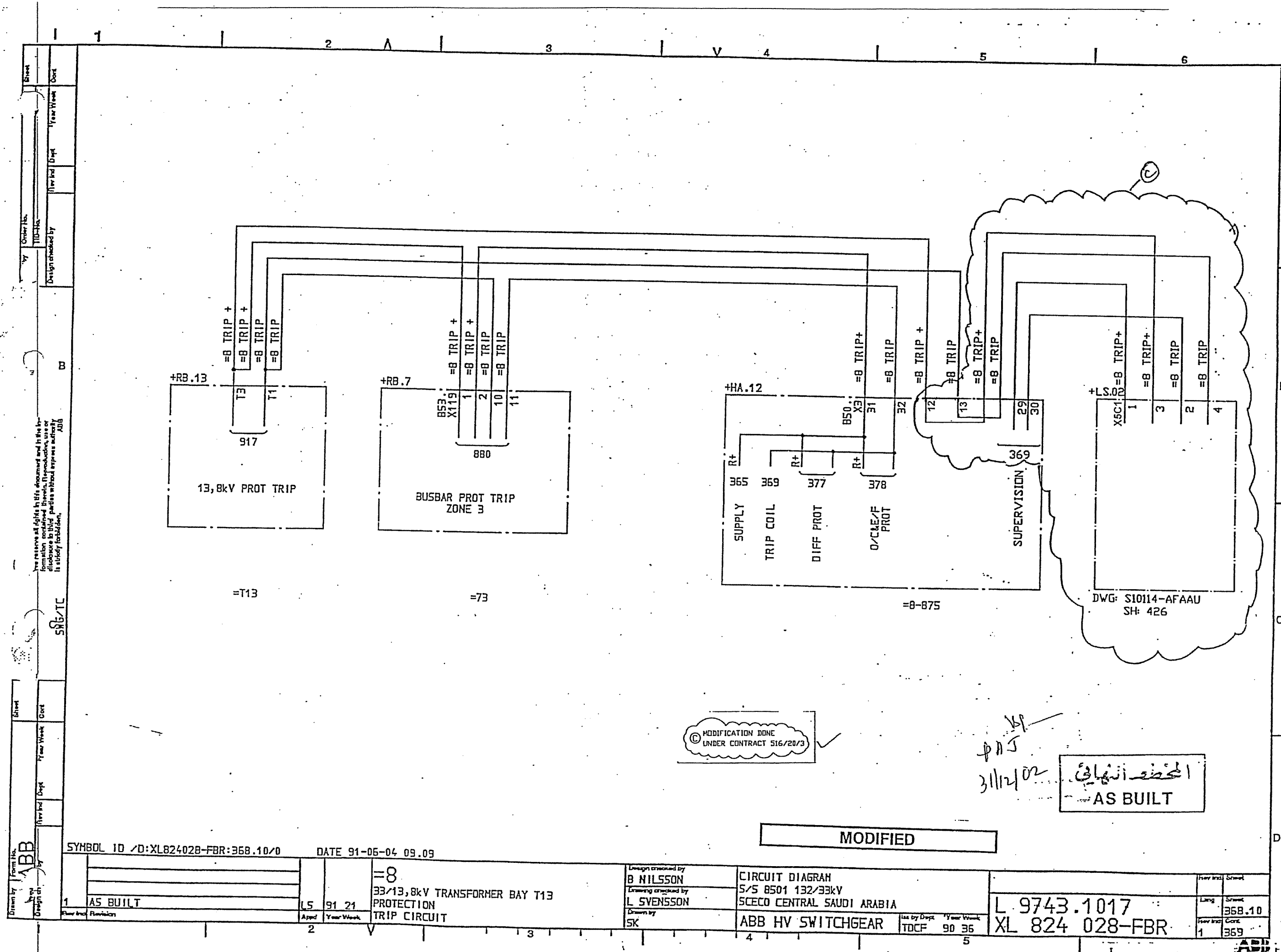
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XL 824 028-FBR

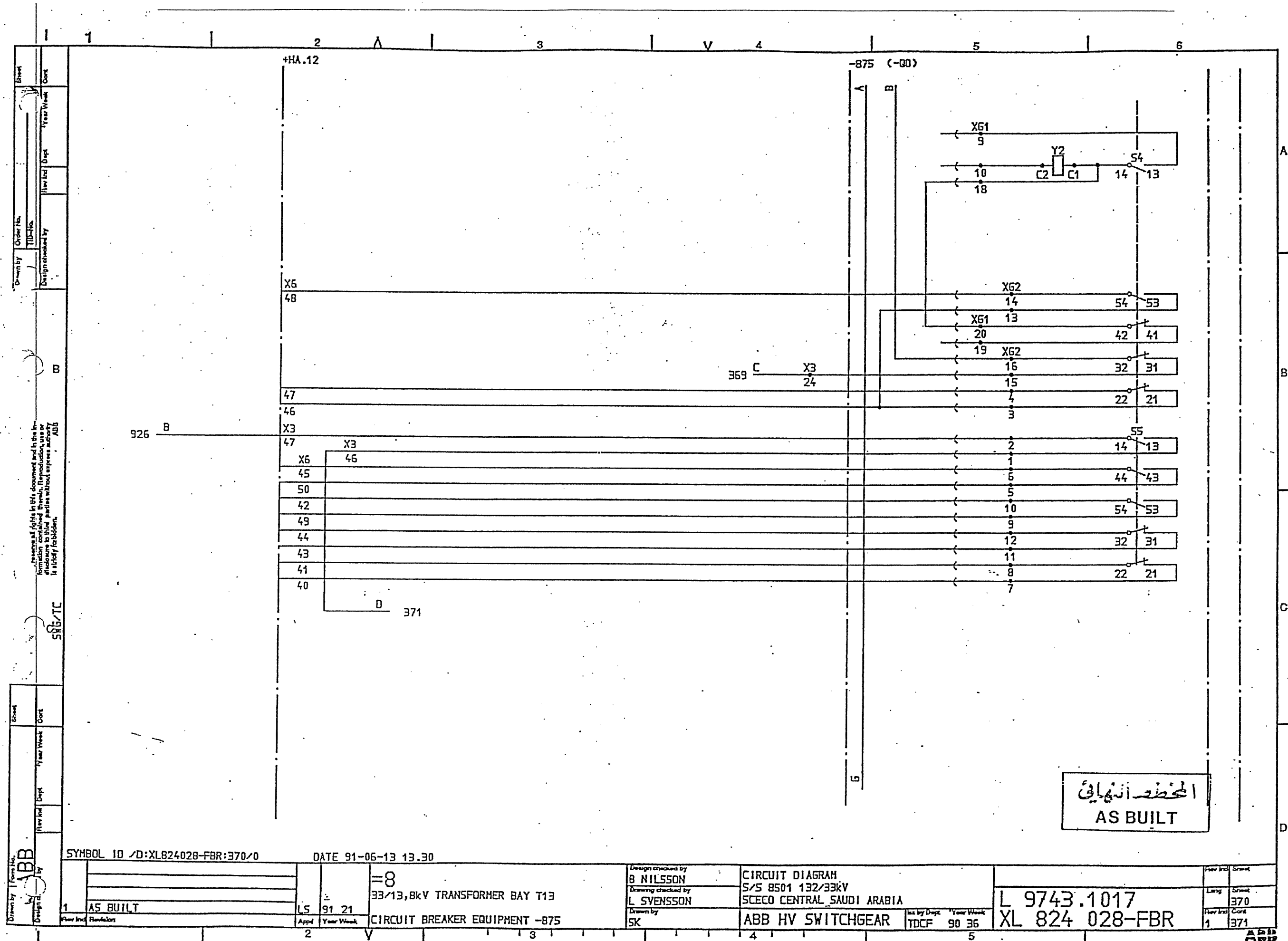
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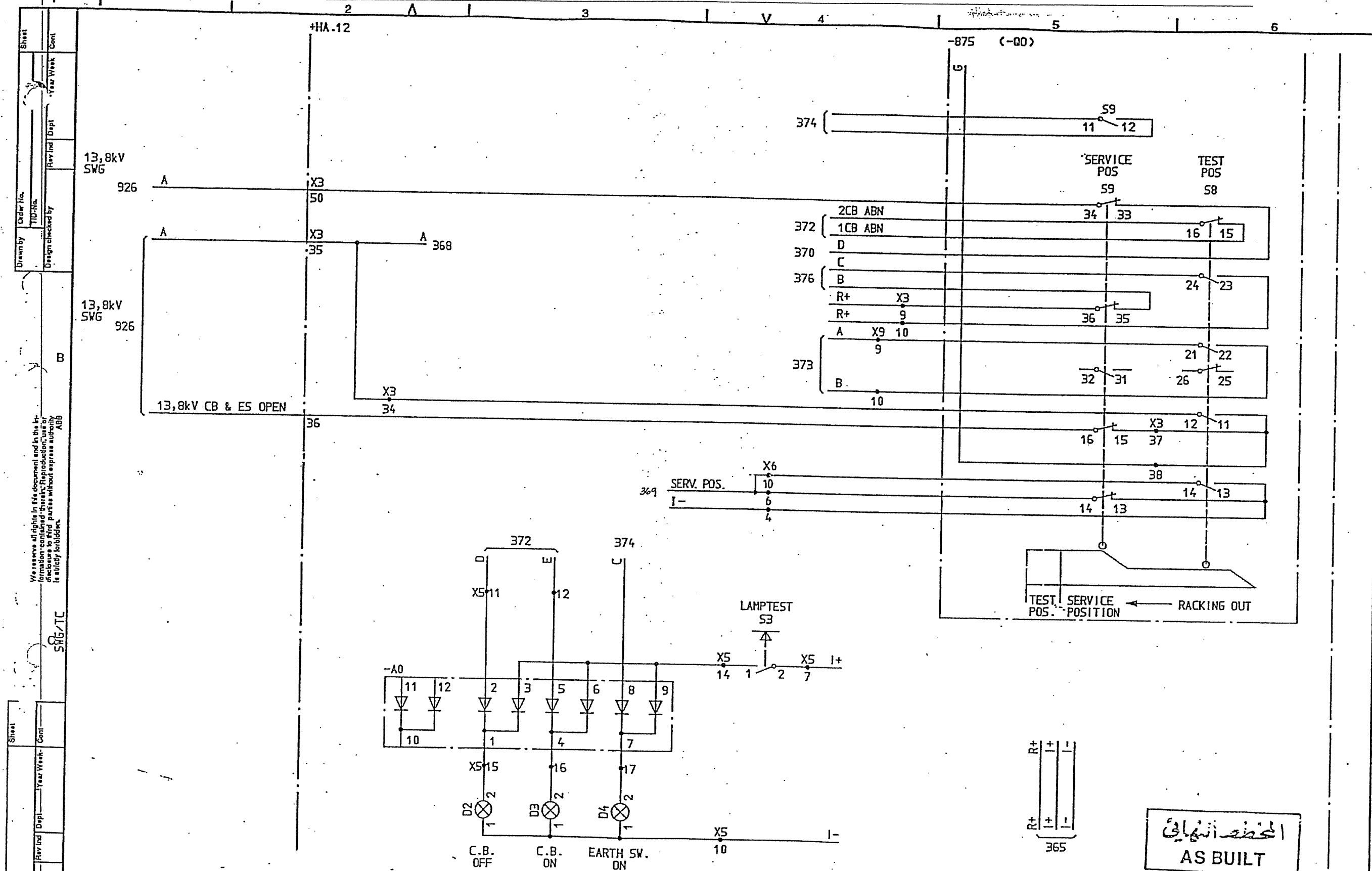
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SYMBOL ID /D:XL824028-FBR:368/0		92-07-02 18.55		=8		33/13,8kV TRANSFORMER BAY T13		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		XL 824-028-FBR		AS BUILT	
2	SCECO SNAG	LS	92 26	1	AS BUILT	LS	91 21	Design checked by	B NILSSON	Drawn by	L SVENSSON	Iss by Dept	TDCF	Year Week	90 36	Rev Ind	Sheet	368	368.10
C.B SELECTOR SWITCHES		2		3		4		5		6		7		8		9		10	







SYMBOL ID /D:XL824028-FBR:371/0		92-07-02 18.55		=8		33/13,8kV TRANSFORMER BAY T13		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		XL 824 028-FBR	
2.1 SCECO SNAG		LS 92 26		1 AS BUILT		CIRCUIT BREAKER EQUIPMENT -875		Design checked by B NILSSON		Drawing checked by L SVENSSON		ABB HV SWITCHGEAR		Iss by Dept TDCF		Year Week 90 36	
Rev Ind Revision		Appd Year Week		2		3		4		5		6		7		8	
2.1		LS		92 26		1		LS		91 21		2.1		371		372	

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Drawn by	Year Week
Order No.	Year Week
Design checked by	Year Week

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ABB	Cont
Drawn by	Year Week
Rev Ind	Year Week

1015.10
472
33kV CB ABNORMAL
33kV CB ABNORMAL

+HA.12

X6-
39

2CB ABN
1CB ABN
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X6

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CLOSED

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M- X2
18 12
S4+

B 365.10

13 14

17 18
15 16

A 365

C 369

CB AUX.
I.R. FAULTY

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D

E

64 63

74 73

32 31

84 83

M- X2
A2 A1

X2 27

14 13

22 21

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54 53

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M- X2
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M- X2
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S4+

X2 27

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المحطة النهائية
AS BUILT

SYMBOL ID /D:XL824028-FBR:372/0

92-07-02 18.55

=8

33/13,8kV TRANSFORMER BAY T13

CIRCUIT BREAKER EQUIPMENT -875

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

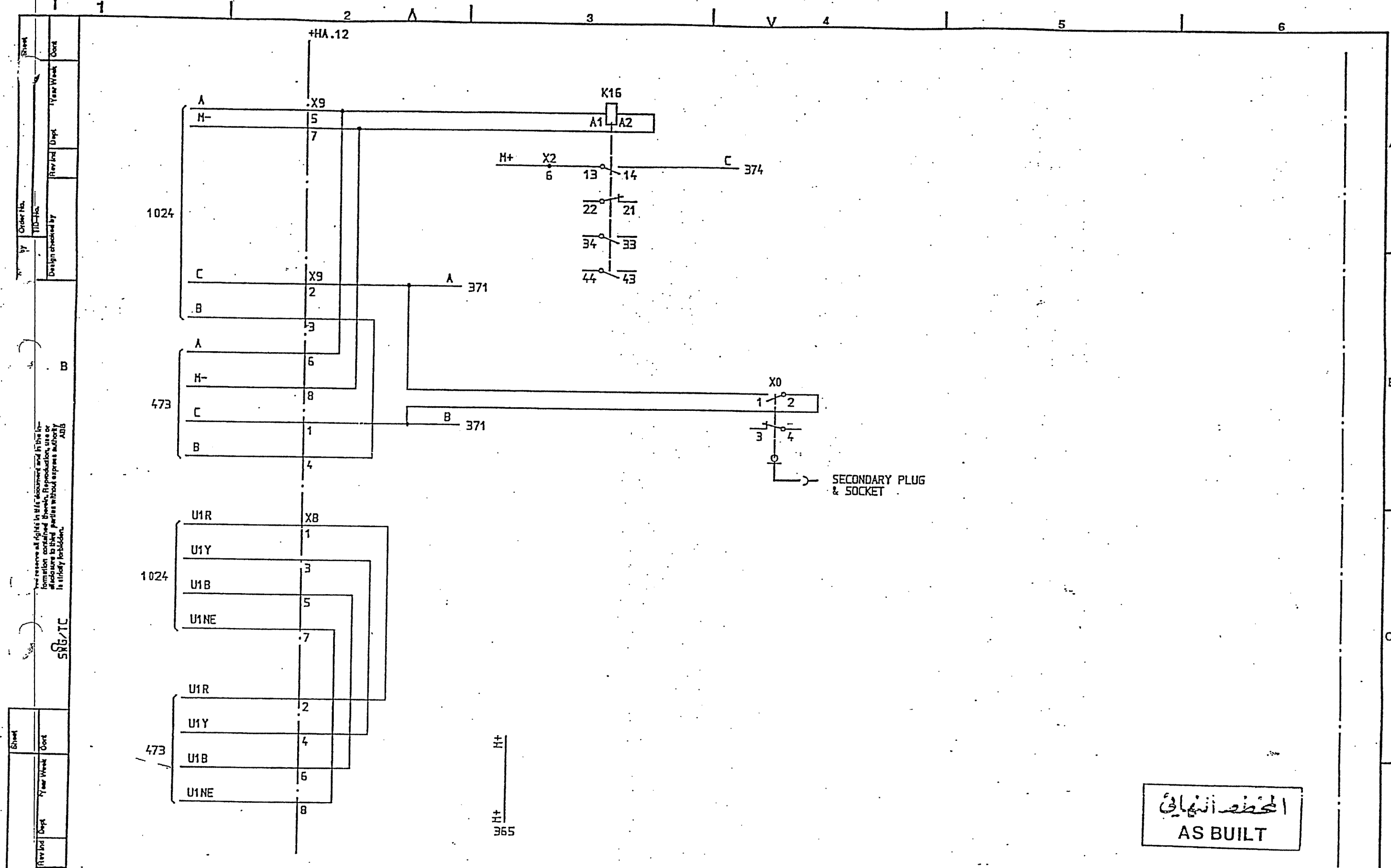
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S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824.028-FBR

Rev Ind	Sheet
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1	372

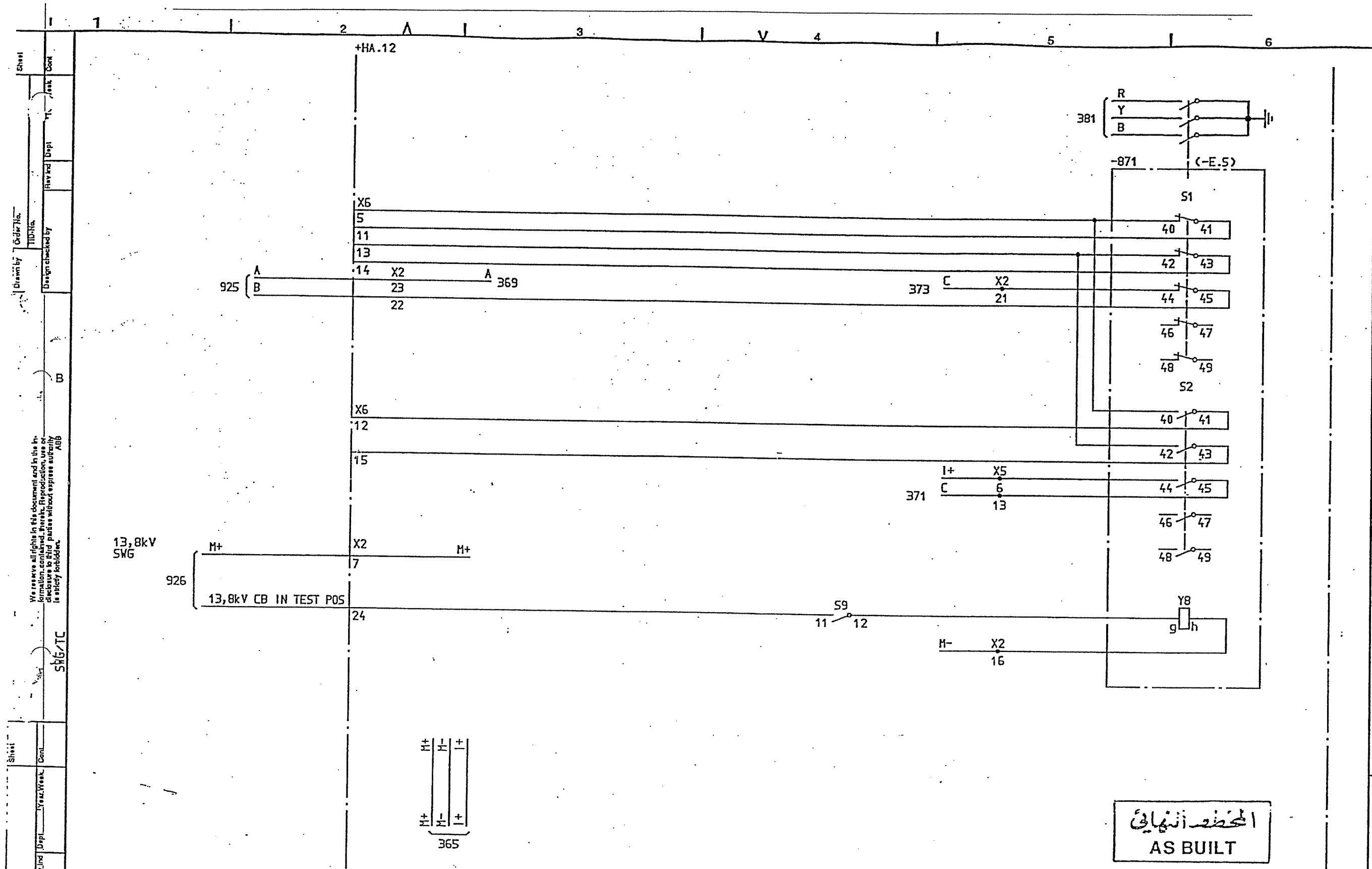
AL 1010
FBR 1010



المخطط النهائي
AS BUILT

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1 AS BUILT		15 91 21		Drawing checked by L SVENSSON		ABB HV SWITCHGEAR		Lang Sheet 373	
Interlocking Relay for C.B. Truck		=8 33/13, 8kV TRANSFORMER BAY T13		Drawn by SK		TDCF 90 36		Rev Incl Cont 1 374	

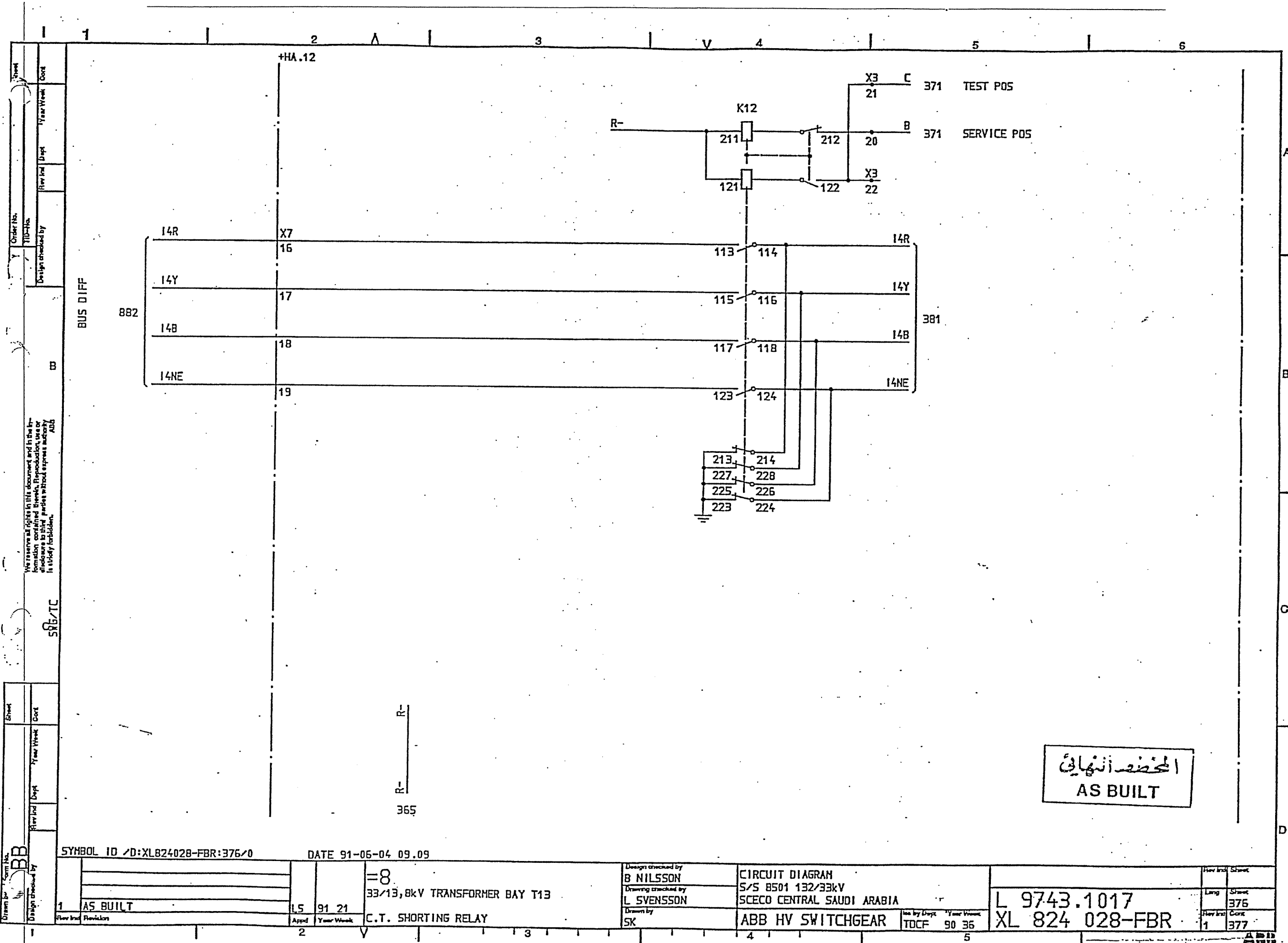
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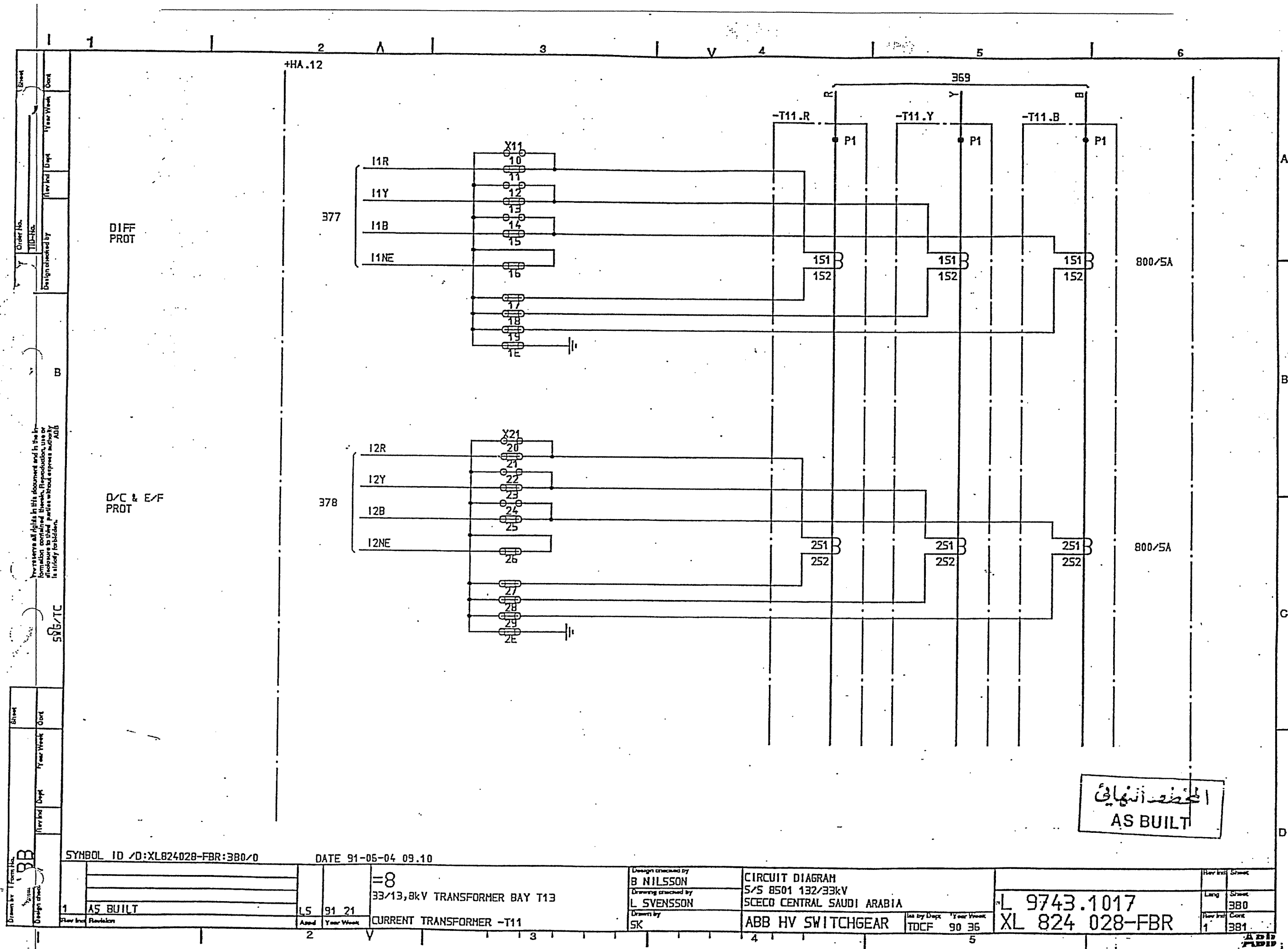
المخطط النهائي
AS BUILT

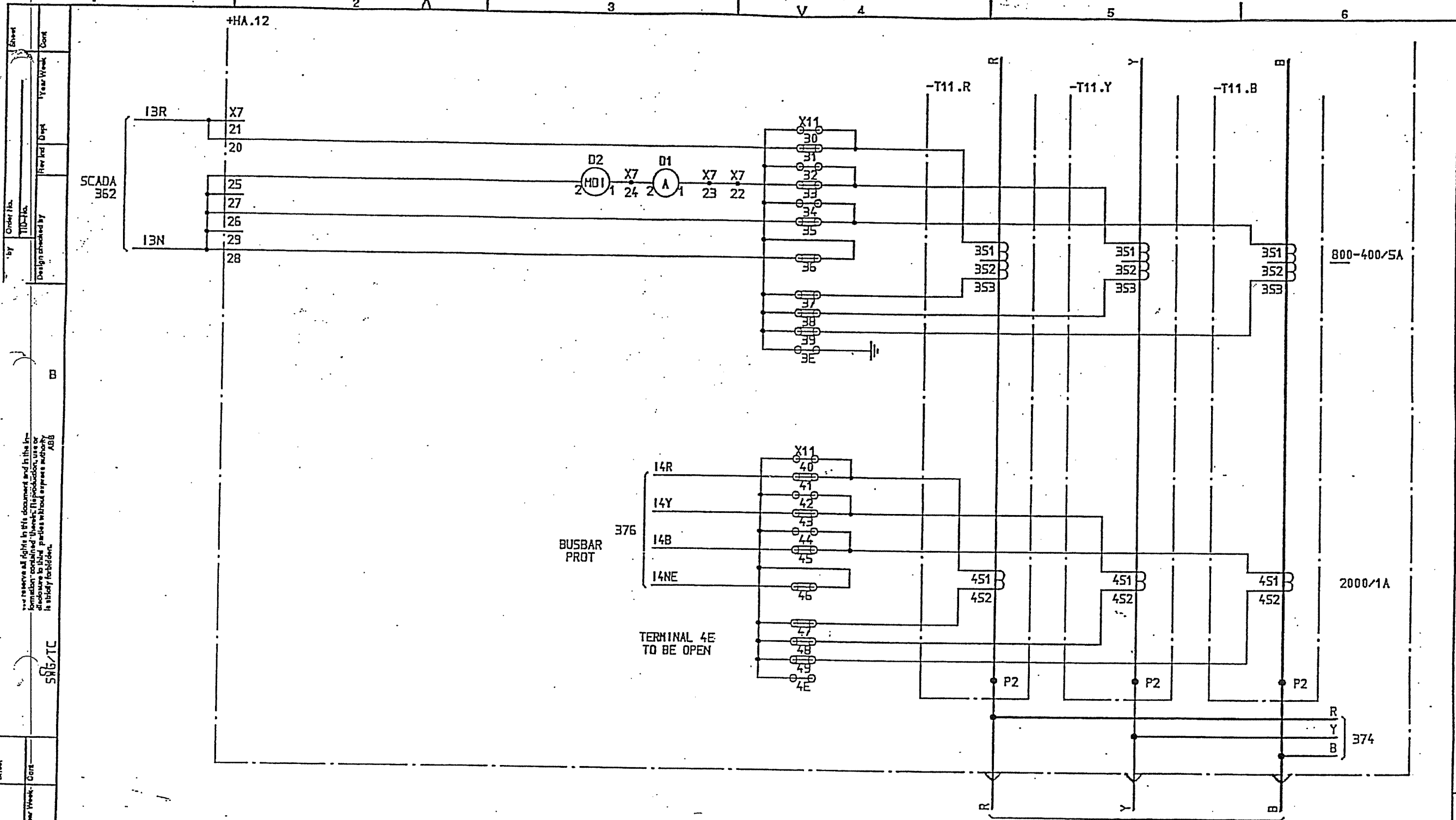
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1		AS BUILT		LS 91 21		EARTH SWITCH EQUIPMENT -871		DRAWN BY SK		SCECO CENTRAL SAUDI ARABIA		374	
Rev Ind Revision		Appd Year Week		2		2		Iss By Dept Year Week		TDCF 90 36		Rev Ind Sheet	
												2	
												376	

AS BUILT



SYMBOL ID /D:XL824028-FBR:376/0		DATE 91-06-04 09.09		=8.		33/13,8kV TRANSFORMER BAY T13		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		XL 824 028-FBR	
AS BUILT		LS 91 21		C.T. SHORTING RELAY		Design checked by B NILSSON		Drawing checked by L SVENSSON		Drawn by SK		Iss by Dept TDCF		Year Week 90 36		Rev No 1	
1		2		3		4		5		6		A		B		C	





33/13,8kV TRANSFORMER T13
=T13

المحظوظ النهائي
AS BUILT

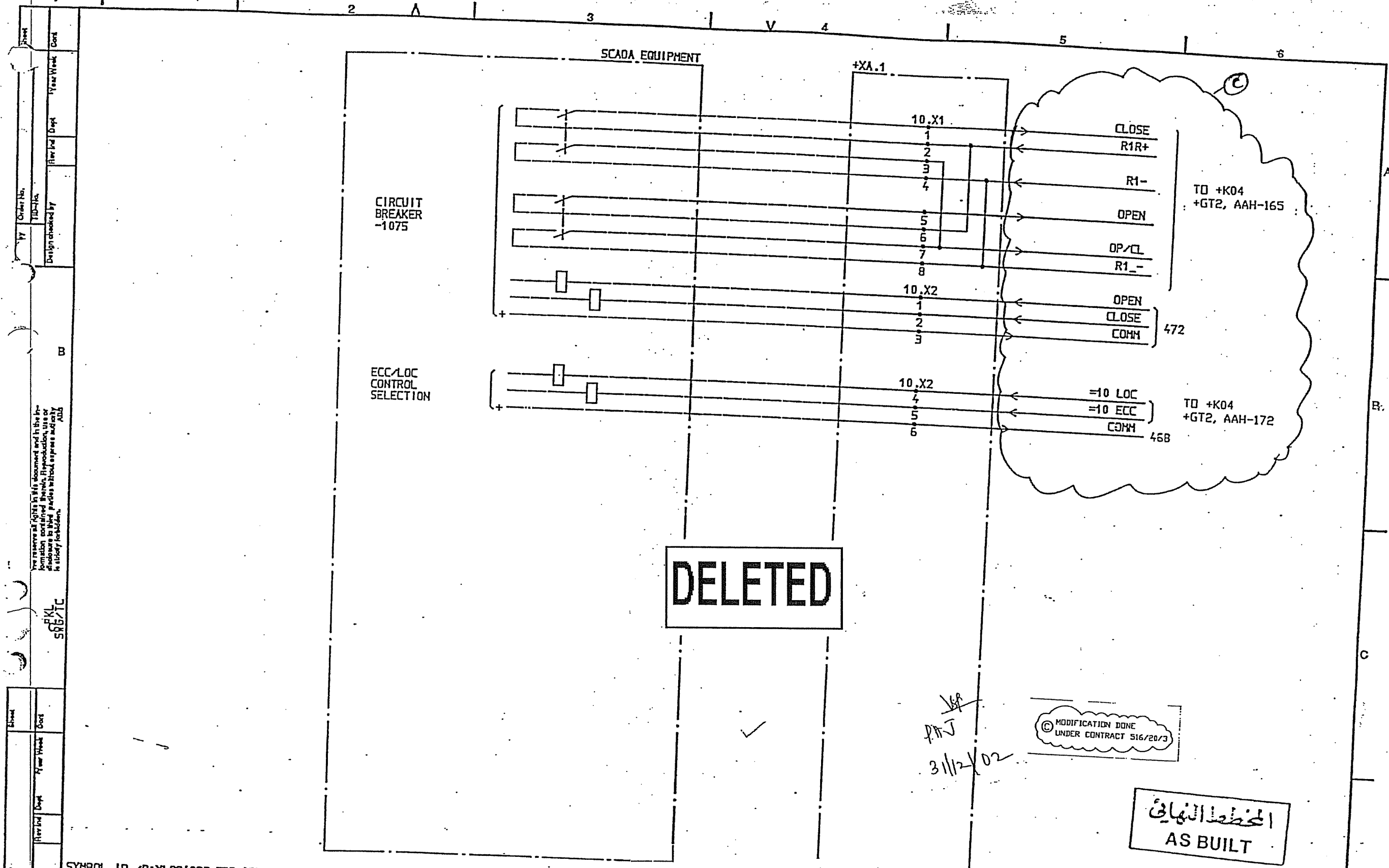
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ITEM	DESIGNATION	SHEET
+KA.2	VOLTAGE DISTRIBUTION	457
+XA.1	SCADA INTERFACE EQUIPMENT	462
+HA.13	AUX. VOLTAGE SUPPLY	465
	HEATING AND LIGHTING	466
	C.B. OPERATION CIRCUITS	468
-1075	CIRCUIT BREAKER EQUIPMENT	469
	INTERLOCKING	473
-1071	EARTH SWITCH EQUIPMENT	474
	OVERCURRENT PROT.	478
-T30	CURRENT TRANSFORMER	480
-1071	EARTH SWITCH EQUIPMENT	485
-1075	CIRCUIT BREAKER EQUIPMENT	490
-405	405 CB CLOSING AND TRIPPING CIRCUIT	491-493
-1075	1075 CB CLOSING AND TRIPPING CIRCUIT	494-495
-1075	1075 DC SUPPLY LOOPING $\pm R1$ & $\pm R2$	496-497

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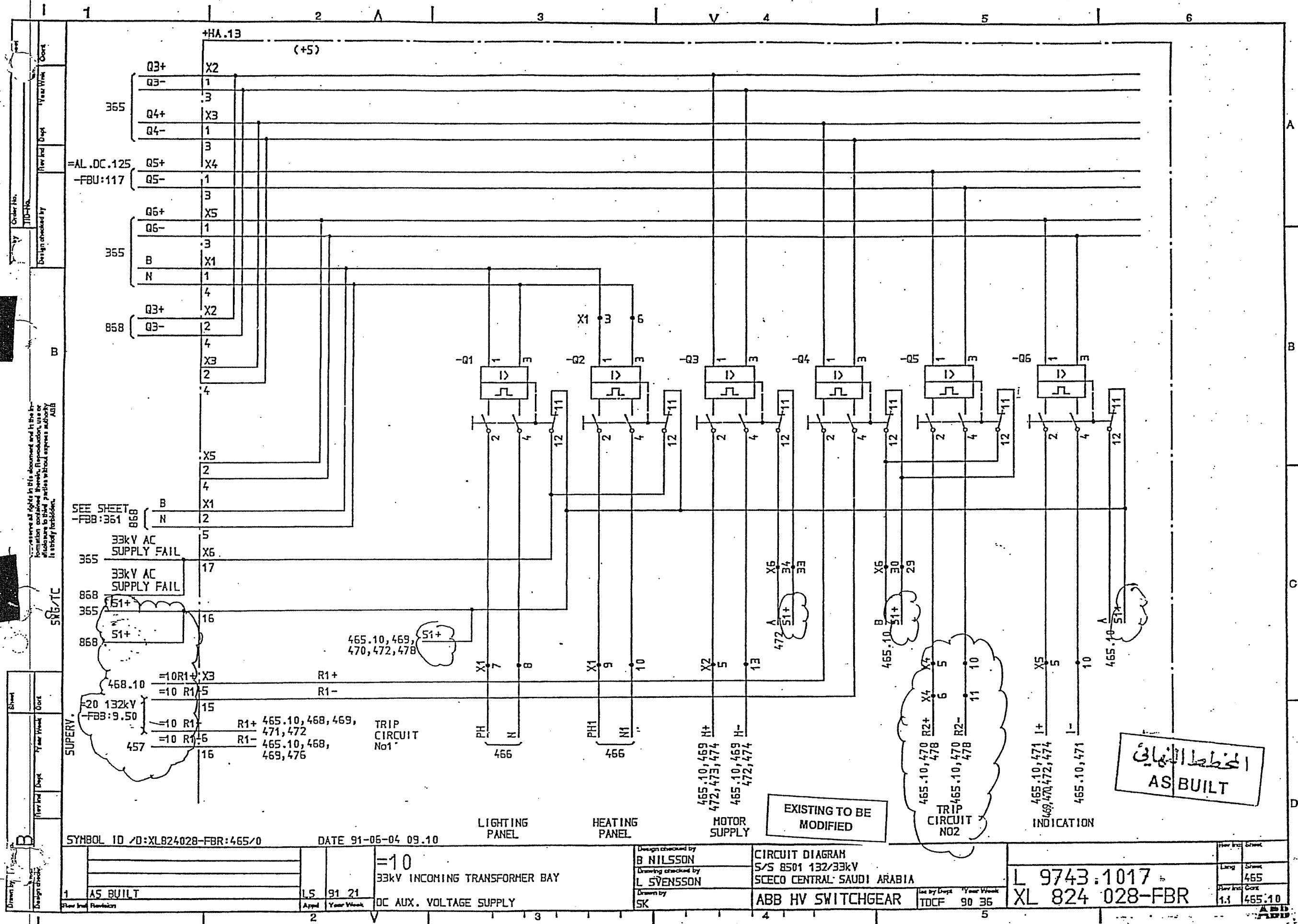
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	1 AS BUILT Rev Ind 1	15 91 21 Appd Year Week					

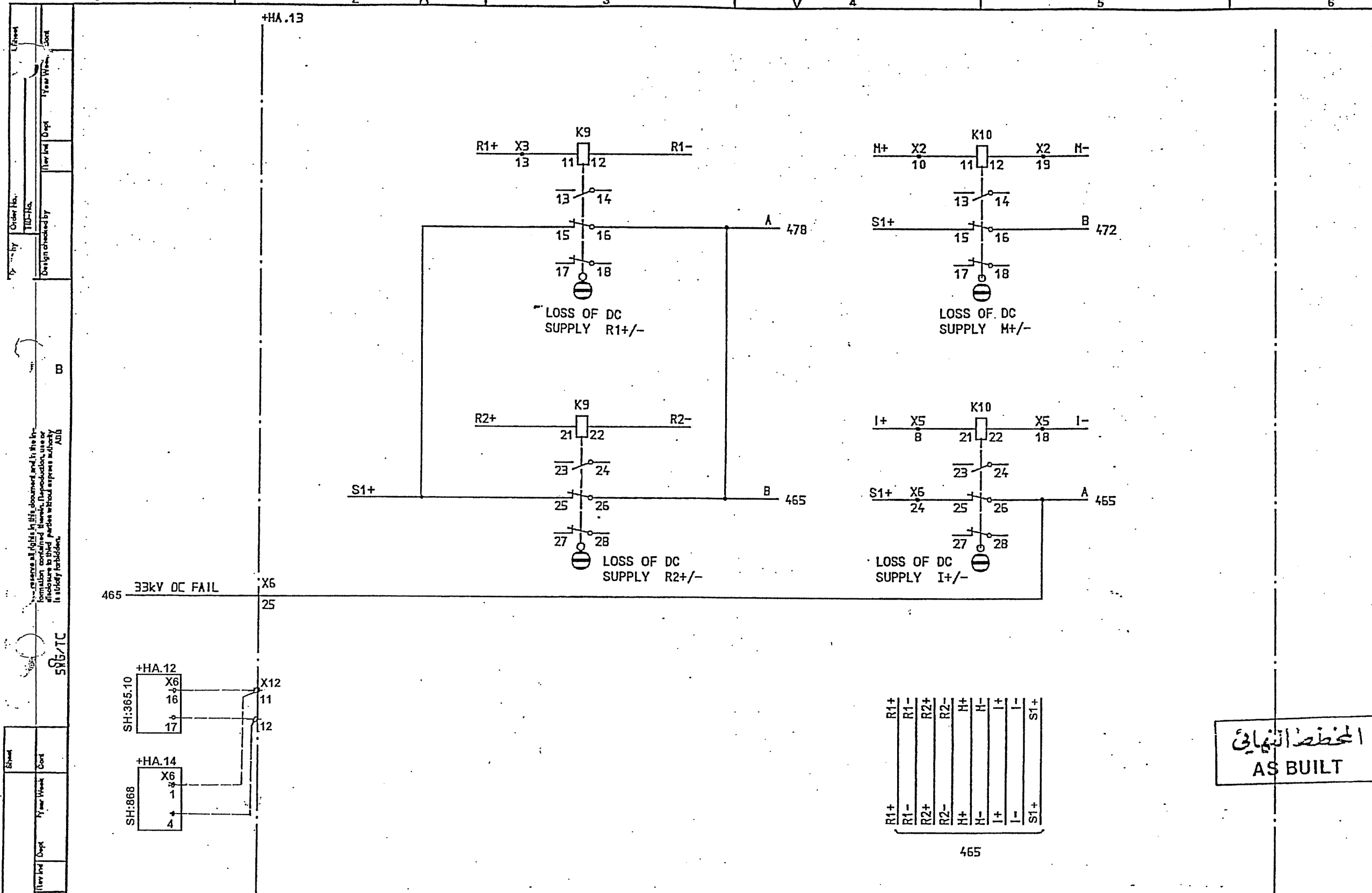


MODIFICATION DONE
UNDER CONTRACT 516/20/3

المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:462/0		DATE 91-05-04 09.10			
AS BUILT		=10		33kV INCOMING TRANSFORMER BAY	
SCADA INTERFACE EQUIPMENT		SCADA INTERFACE EQUIPMENT		CIRCUIT DIAGRAM	
S. STRIDSHAN		S. STRIDSHAN		S/S BS01 132/33kV	
IA		IA		SCCO CENTRAL SAUDI ARABIA	
ABB HV SWITCHGEAR		ABB HV SWITCHGEAR		L 9743.1017	
TCE 90 10		TCE 90 10		XL 824 028-FBR	
1		1		462	
1		1		465	





المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:465.10/0

DATE 91-06-04 09.10

=10

33kV INCOMING TRANSFORMER BAY

DC AUX. VOLTAGE SUPPLY

Design checked by

B NILSSON

Design checked by

L SVENSSON

Drawn by

SK

CIRCUIT DIAGRAM

S/S 8501 132/33kV

SCECO CENTRAL SAUDI ARABIA

ABB HV SWITCHGEAR

See by Dept Year Week
TDCF 90 36

Rev Int Sheet

Rev Int Sheet

Rev Int Sheet

Rev Int Sheet

L 9743.1017

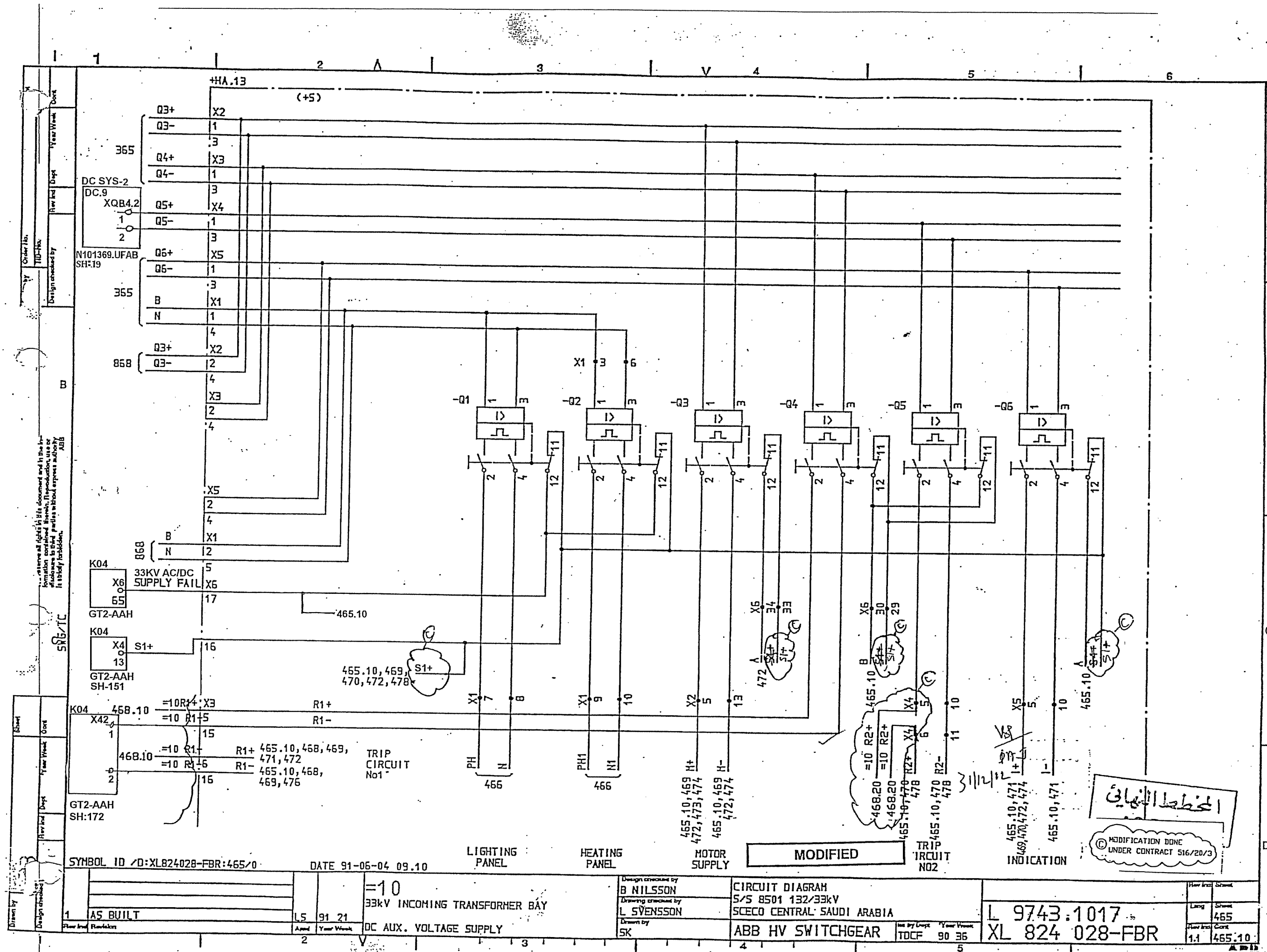
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Rev Int Sheet

Rev Int Sheet

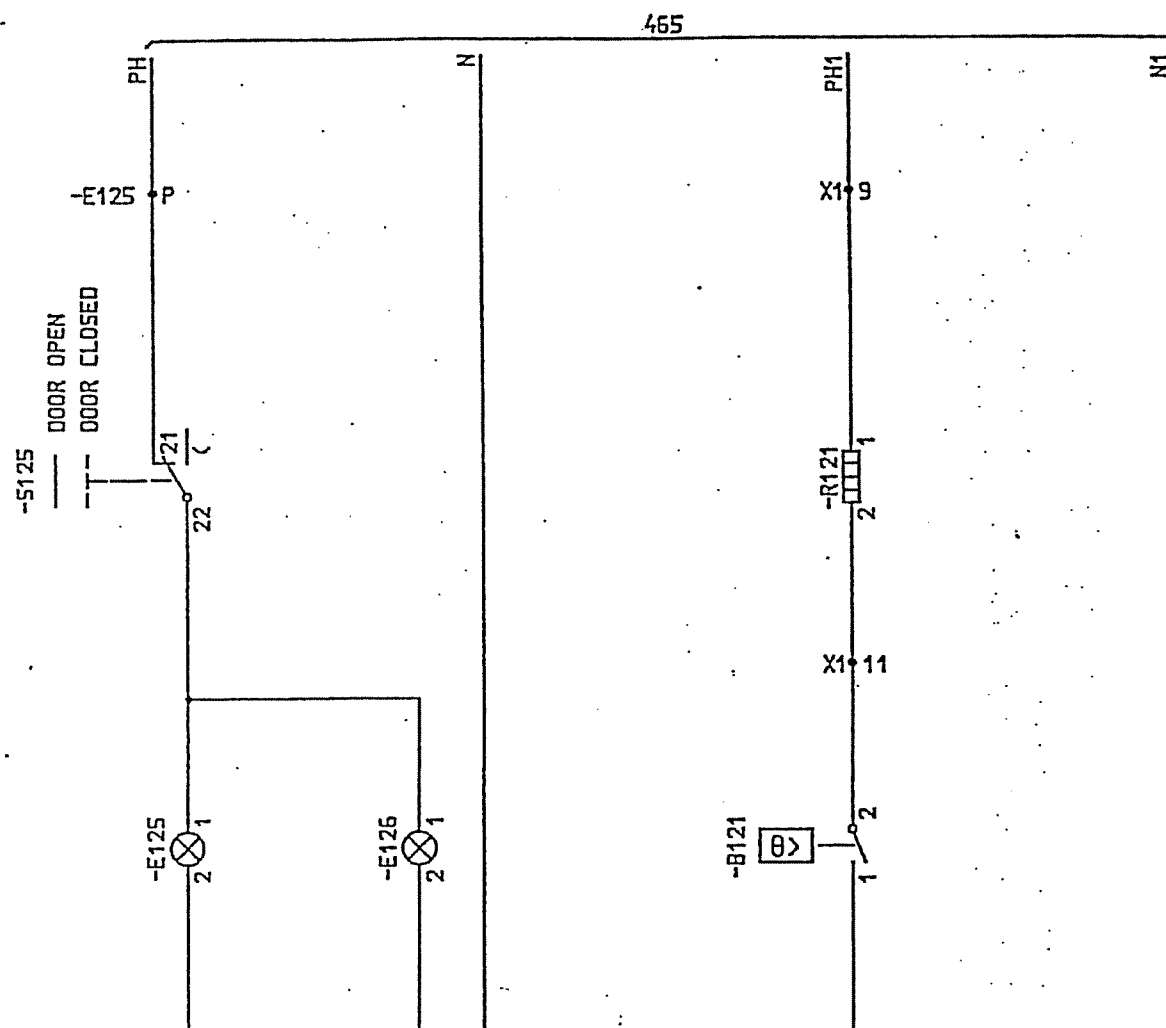
Rev Int Sheet

Rev Int Sheet



Order No.	TID No.	Design checked by	Rev and Dept	Year/Week	Cont
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#HA.13



المخطط النهائي
AS BUILT

SYMBOL ID /0:XL824028-FBR:466/0

DATE 91-06-04 09.10

=10		33kV INCOMING TRANSFORMER BAY	
AS BUILT		HEATER AND LIGHT	
Rev and	Revision	As of	Year/Week
	1		91 21

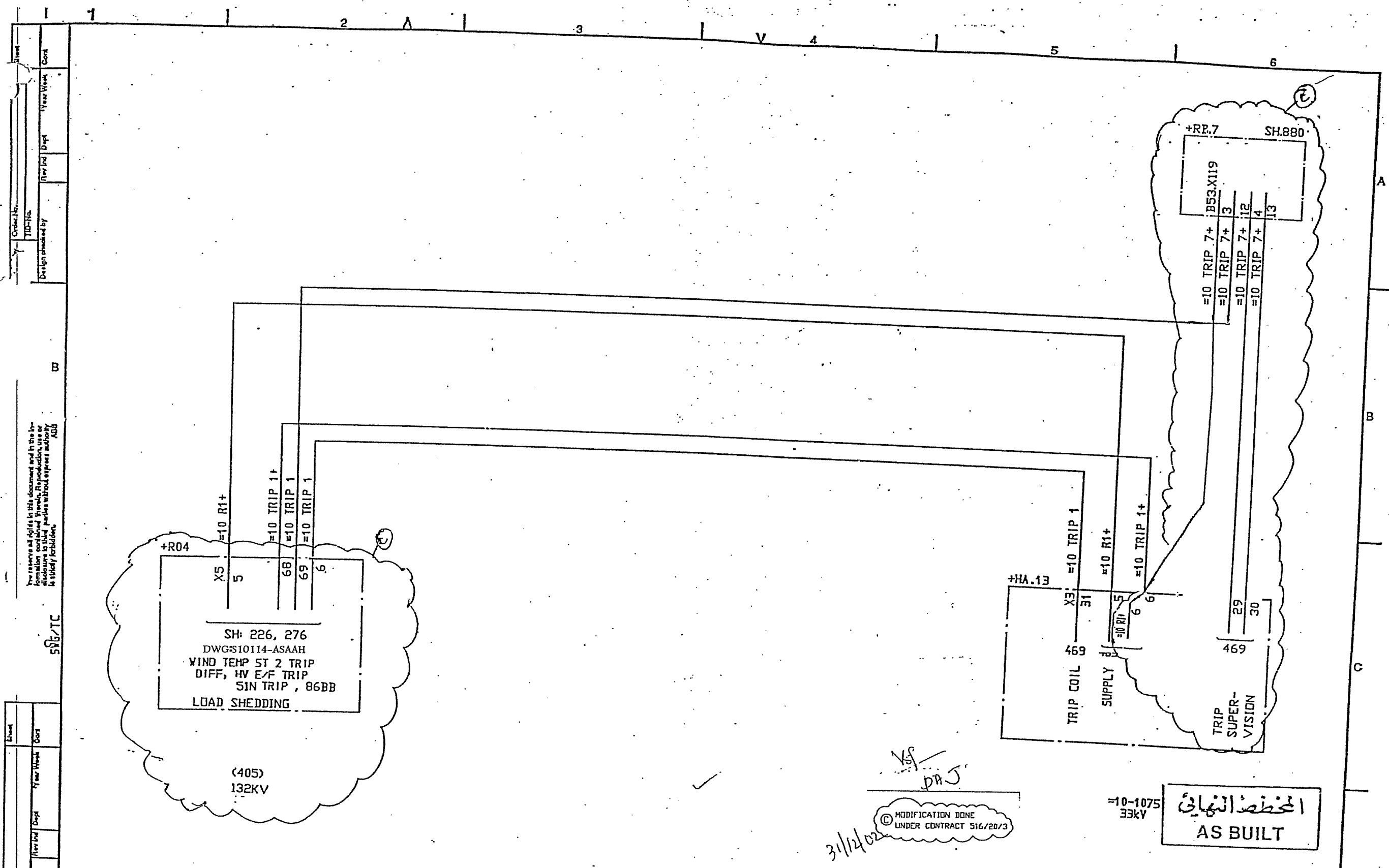
Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Rev and Dept
TOCF 90 36

L 9743.1017
XL 824 028-FBR

Rev and	Sheet
1	466

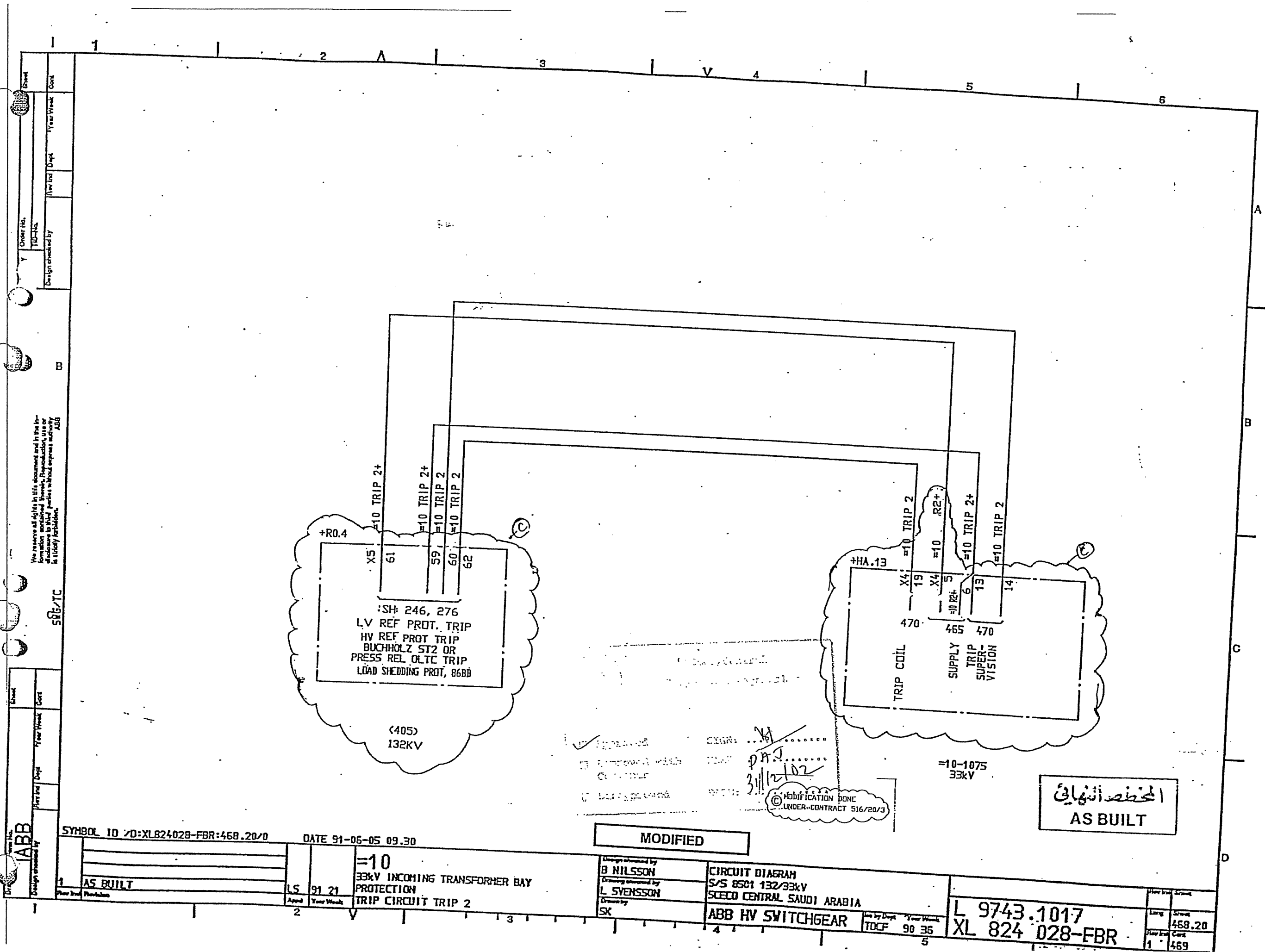


31/4/02
 © MODIFICATION DONE
 UNDER CONTRACT 516/20/3

المحطة النهائية
 AS BUILT

MODIFIED

SYMBOL ID /D:XL824028-FBR:468.10/0		DATE 91-06-05 09.30			
1	AS BUILT	LS	91 21	=10 33kV INCOMING TRANSFORMER BAY PROTECTION TRIP CIRCUIT TRIP 1	
2		V		Design checked by B. NILSSON Drawing checked by L. SYENSSON Drawn by SK	
				CIRCUIT DIAGRAM S/S 8501 132/33kV SLECO CENTRAL SAUDI ARABIA ABB HV SWITCHGEAR	
				Issued by Dept TDCF	Year Week 90 36
				L 9743.1017 XL 824 028-FBR	
				Long 458.10	Short 458.20



المخطط النهائي
AS BUILT

DESIGN: ...
DRAWN: ...
CHECKED: ...
DATE: 31/12/02
MODIFICATION DONE
UNDER CONTRACT 516/20/3

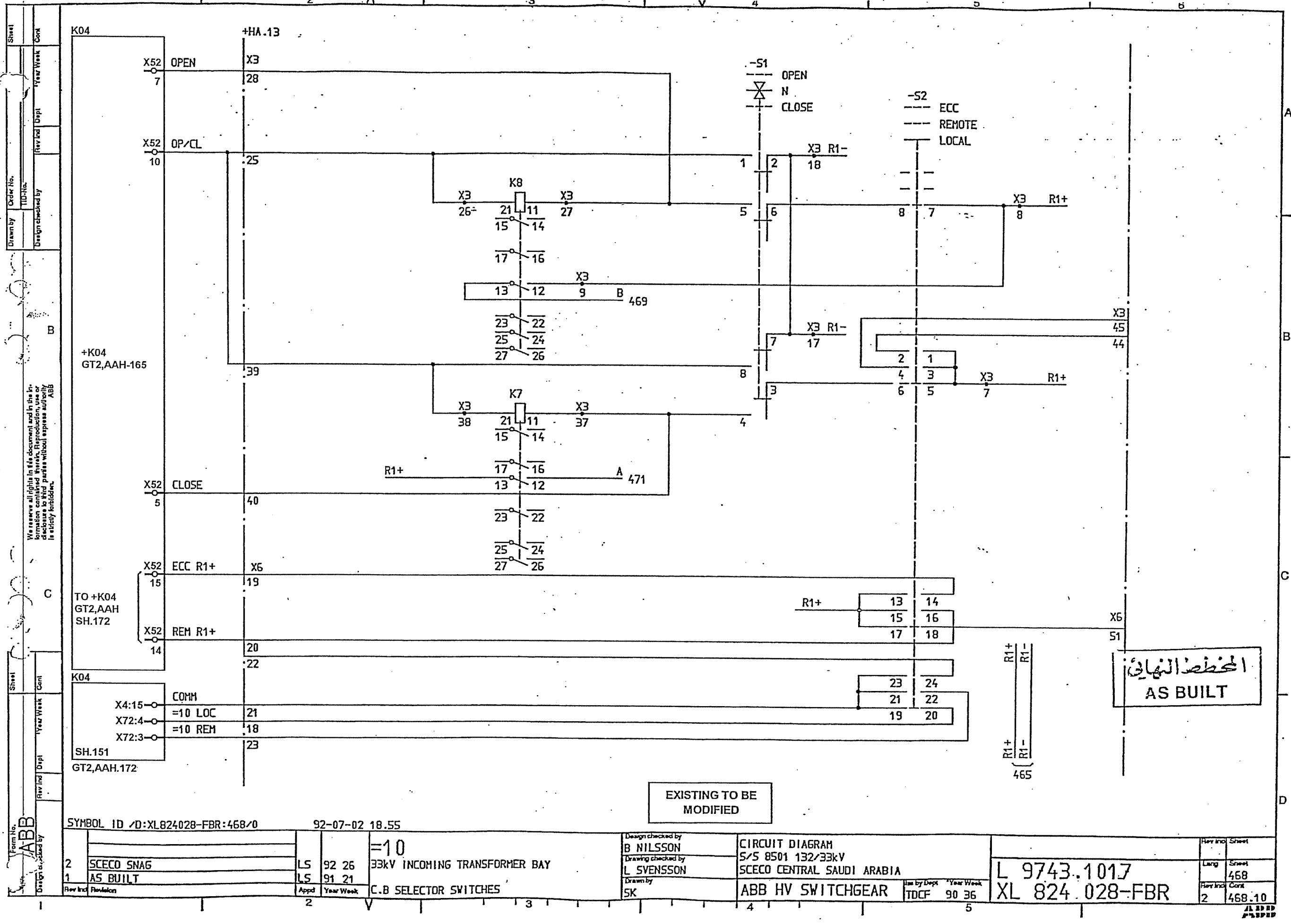
MODIFIED

SYMBOL ID: XL824028-FBR:468.20/0 DATE 91-06-05 09.30

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Design checked by B NILSSON	CIRCUIT DIAGRAM
Design checked by L SVENSSON	S/S 8501 132/33kV
Drawn by SK	SCECO CENTRAL SAUDI ARABIA
	ABB HV SWITCHGEAR

L 9743.1017	How built	Drawn
XL 824 028-FBR	Large	468.20
	How built	1 469



المخطط النهائي
AS BUILT

EXISTING TO BE
MODIFIED

SYMBOL ID /D:XL824028-FBR:468/0

92-07-02 18.55

2	SCECO SNAG	LS	92 26	=10
1	AS BUILT	LS	91 21	33kV INCOMING TRANSFORMER BAY
Rev	Inc	Revision	Appd	Year Week
2				C.B SELECTOR SWITCHES

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

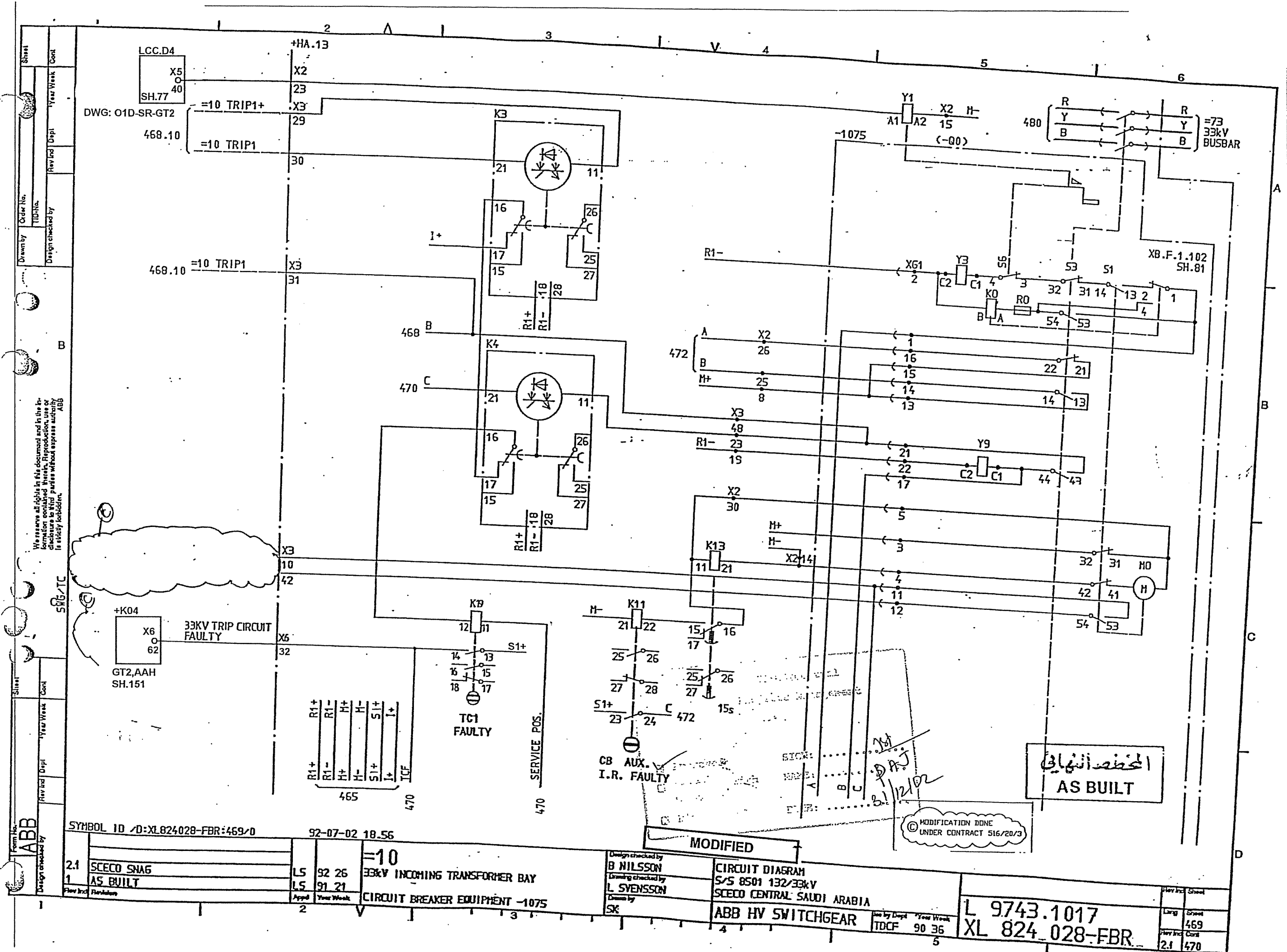
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S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TDCF 90 36

L 9743.1017
XL 824.028-FBR

Rev	Inc	Sheet
2		468
Rev	Inc	Cost
2		468.10

ABB



المخطط النهائي
AS BUILT

© MODIFICATION DONE
UNDER CONTRACT 516/20/3

SYMBOL ID /D:XL824028-FBR:469/0

92-07-02 18.56

2.1	SCECO SNA6	LS	92 26	=10
1	AS BUILT	LS	91 21	33KV INCOMING TRANSFORMER BAY
		Appd	Year Week	CIRCUIT BREAKER EQUIPMENT -1075
		2		

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK


MODIFIED
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

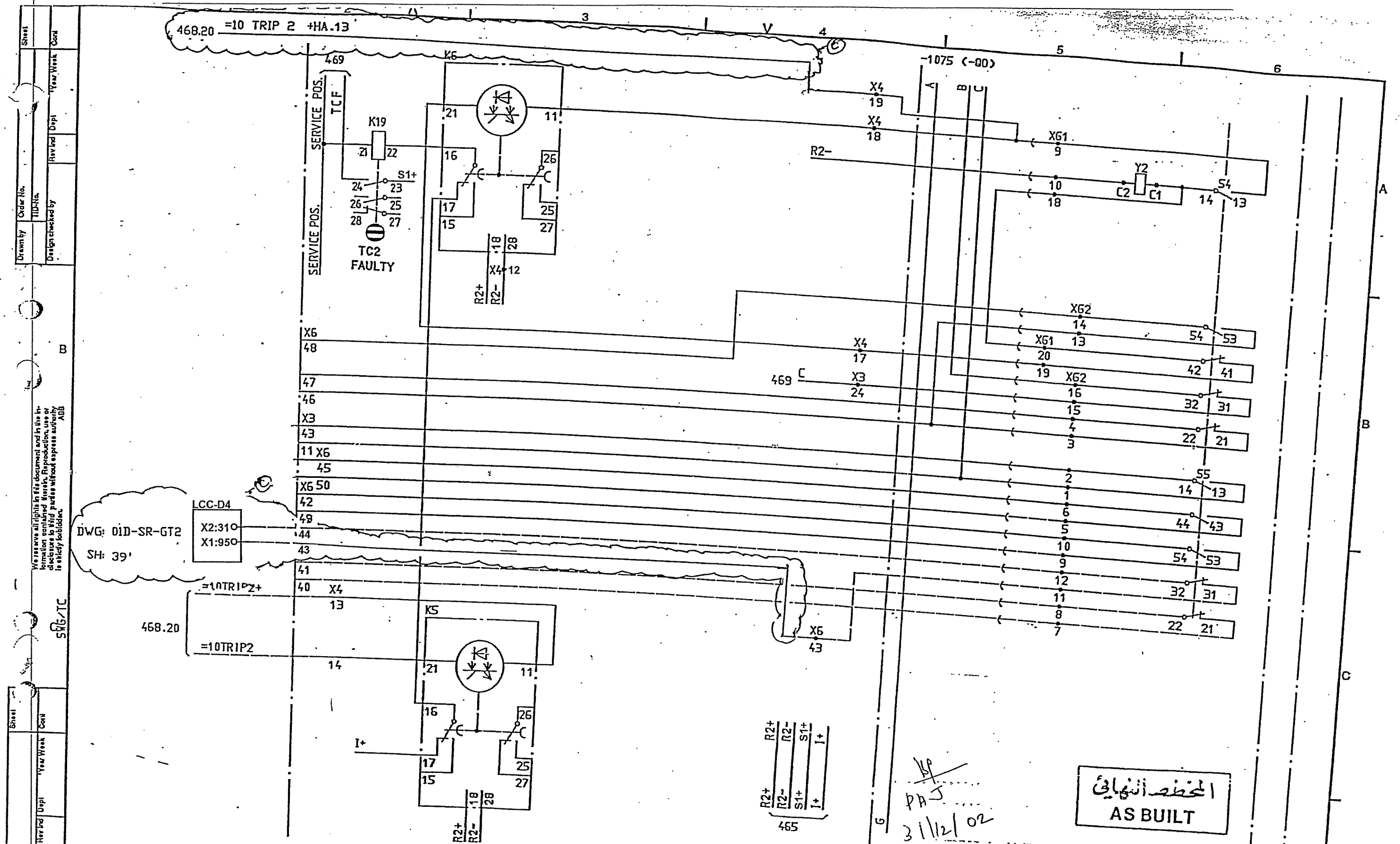
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L 9743.1017
XL 824_028-FBR

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Sheet	Year Week	Cont
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	Form No.	Sheet		
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Design checked by	Rev	Inc	Year	Week
				Cont



Drawn by: **ABB**
 Design checked by: **ABB**
 Year: **92-07-02**
 Sheet: **2.1**
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 Description: **CIRCUIT BREAKER EQUIPMENT -1075**
 Date: **92-07-02 18.56**
 Revision: **1**
 Drawn by: **ABB**
 Design checked by: **ABB**
 Year: **92-07-02**
 Sheet: **2.1**
 Title: **33kV INCOMING TRANSFORMER BAY**
 Description: **CIRCUIT BREAKER EQUIPMENT -1075**
 Date: **92-07-02 18.56**
 Revision: **1**

MODIFIED

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B NILSSON
 Drawing checked by:
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 Drawn by:
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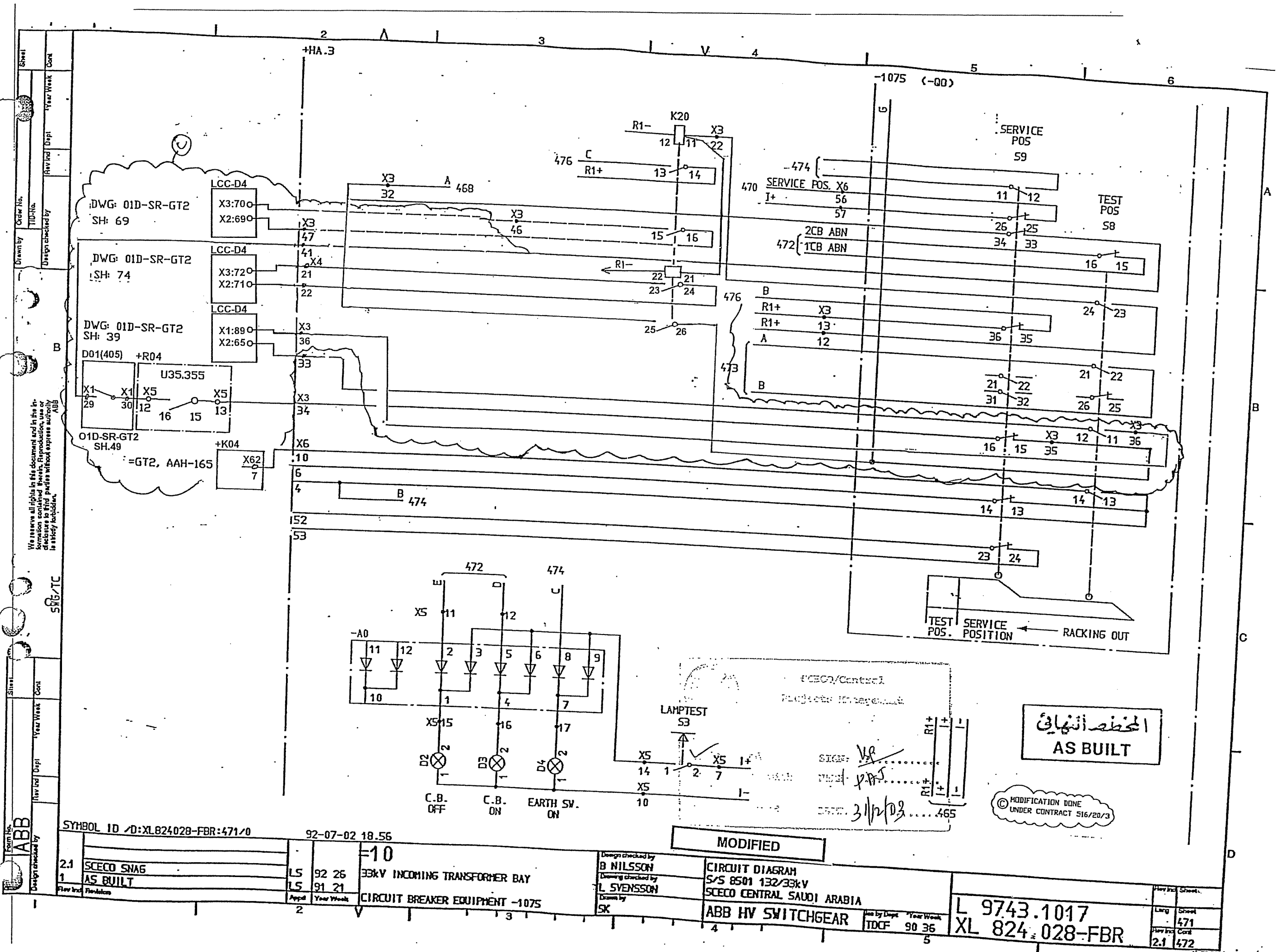
CIRCUIT DIAGRAM
 S/S 8501 132/33kV
 SCECO CENTRAL SAUDI ARABIA
 ABB HV SWITCHGEAR

L 9743.1017
 XL 824 028-FBR

MODIFICATION DONE
 UNDER CONTRACT 516/20/3

المحطة النهائية
 AS BUILT

Drawn by: **ABB**
 Design checked by: **ABB**
 Year: **92-07-02**
 Sheet: **2.1**
 Title: **33kV INCOMING TRANSFORMER BAY**
 Description: **CIRCUIT BREAKER EQUIPMENT -1075**
 Date: **92-07-02 18.56**
 Revision: **1**



ABB

SYMBOL ID /D:XL824028-FBR:471/0

92-07-02 18.56

=10

2.1	SCECO SNA6
1	AS BUILT

LS	92 26	33kV INCOMING TRANSFORMER BAY
LS	91 21	
Appd	Year Week	CIRCUIT BREAKER EQUIPMENT -1075
2		

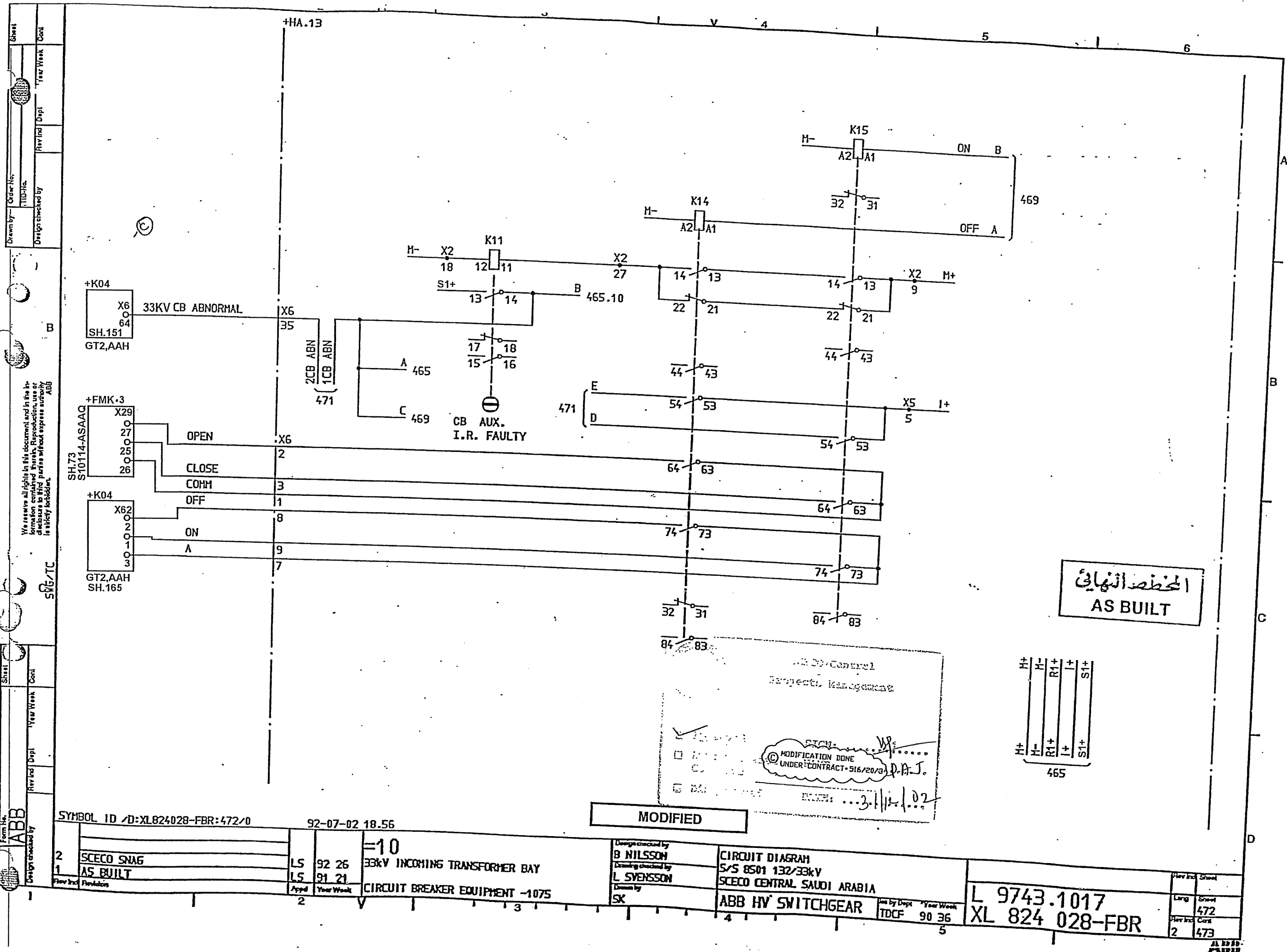
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B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

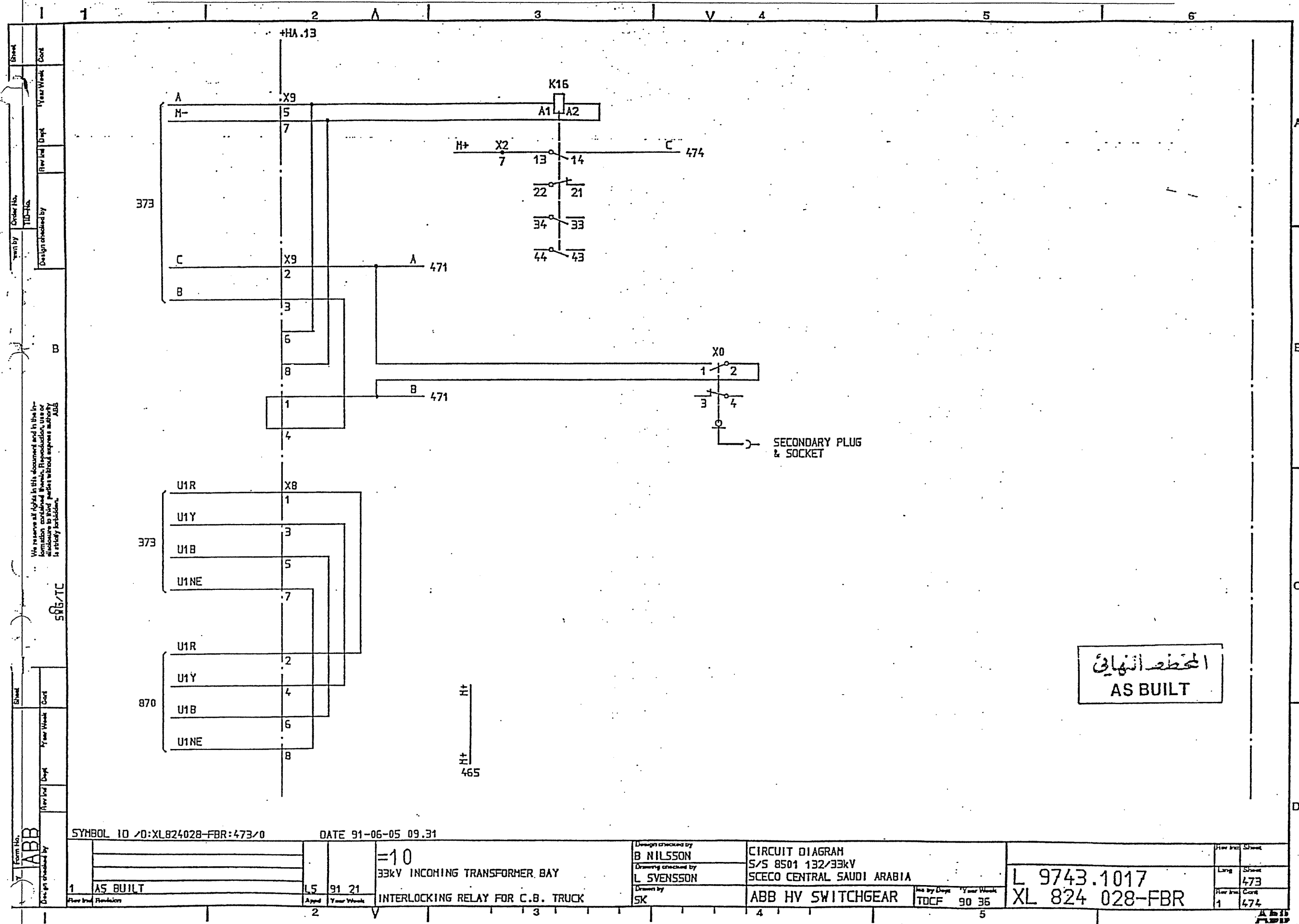
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Issued by Dept Year Week
TDCF 90 36

L 9743.1017
XL 824.028-FBR

Rev	Rev	Rev
2.1	471	472





المخطط النهائي
AS BUILT

SYMBOL ID /0:XL824028-FBR:473/0

DATE 91-06-05 09.31

1	AS BUILT	L5	91 21
Rev	Int	Revision	Appd

=10
33kV INCOMING TRANSFORMER BAY
INTERLOCKING RELAY FOR C.B. TRUCK

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

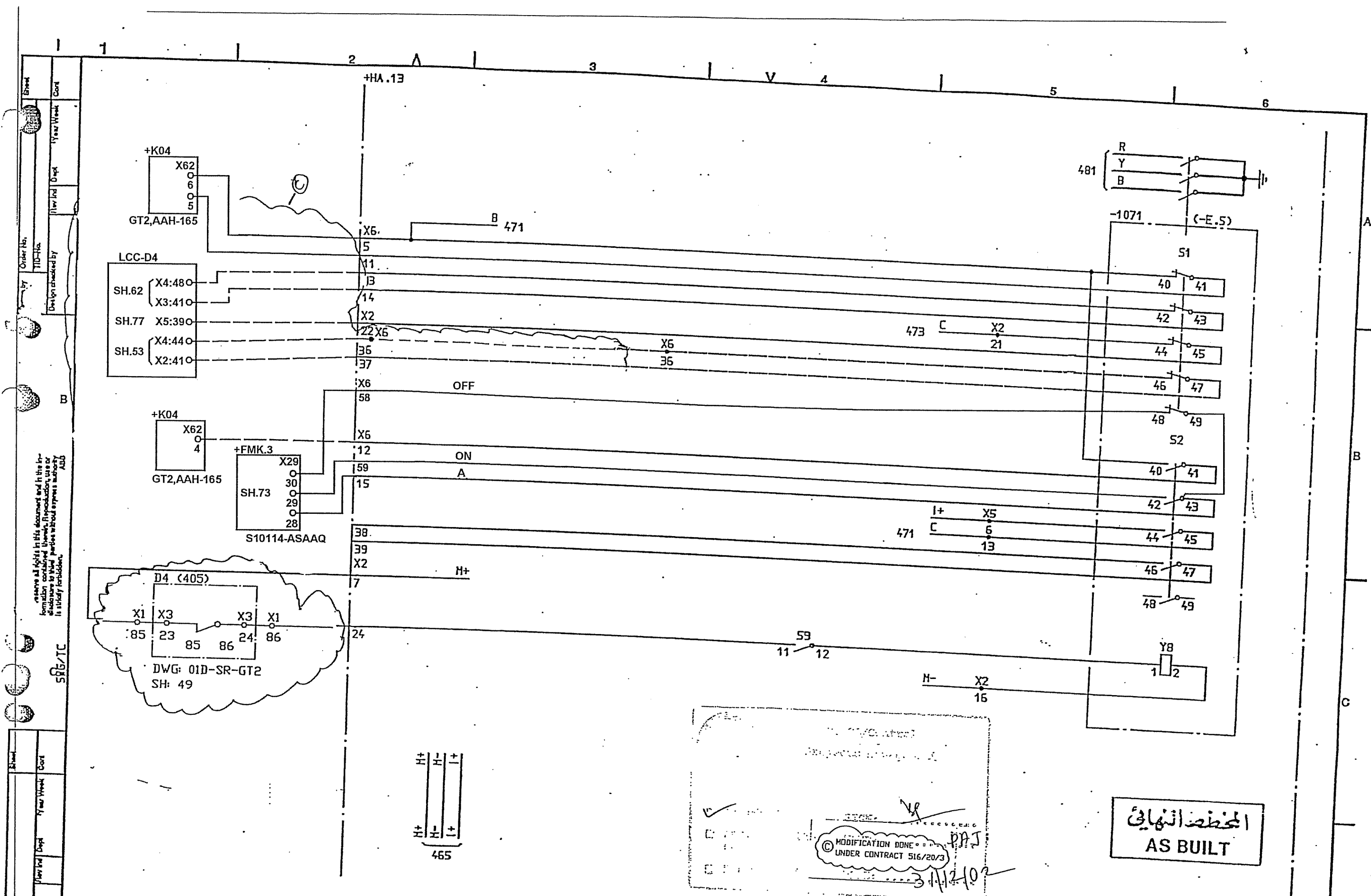
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S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TOCF 90 35

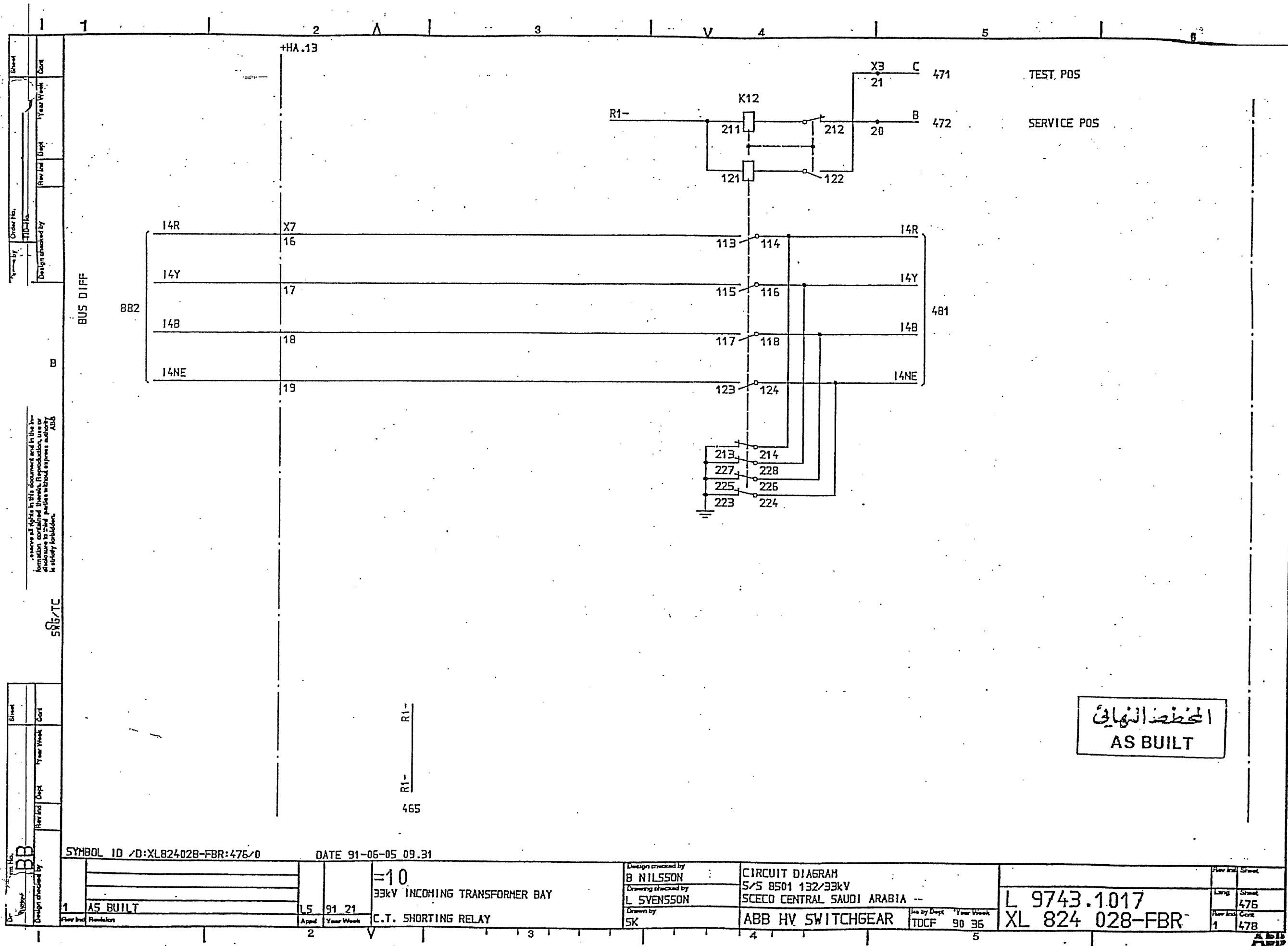
L 9743.1017
XL 824 028-FBR

How Int	Sheet
Long	473
How Int	Cont
1	474

ABB
ASB



SYMBOL ID / D: XL824028-FBR:474/0		DATE 91-05-05 09.31		=10		33kV INCOMING TRANSFORMER BAY		EARTH SWITCH EQUIPMENT -1071		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		ABB HV SWITCHGEAR		L 9743.1017		XL 824 028-FBR	
AS BUILT		15 91 21		1		1		1		1		1		1		1		1		1	
1		2		3		4		5		6		7		8		9		10		11	



المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:476/0

DATE 91-06-05 09.31

1	AS BUILT	15	91 21
2			
3			
4			
5			
6			

=10
33kV INCOMING TRANSFORMER BAY
C.T. SHORTING RELAY

Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

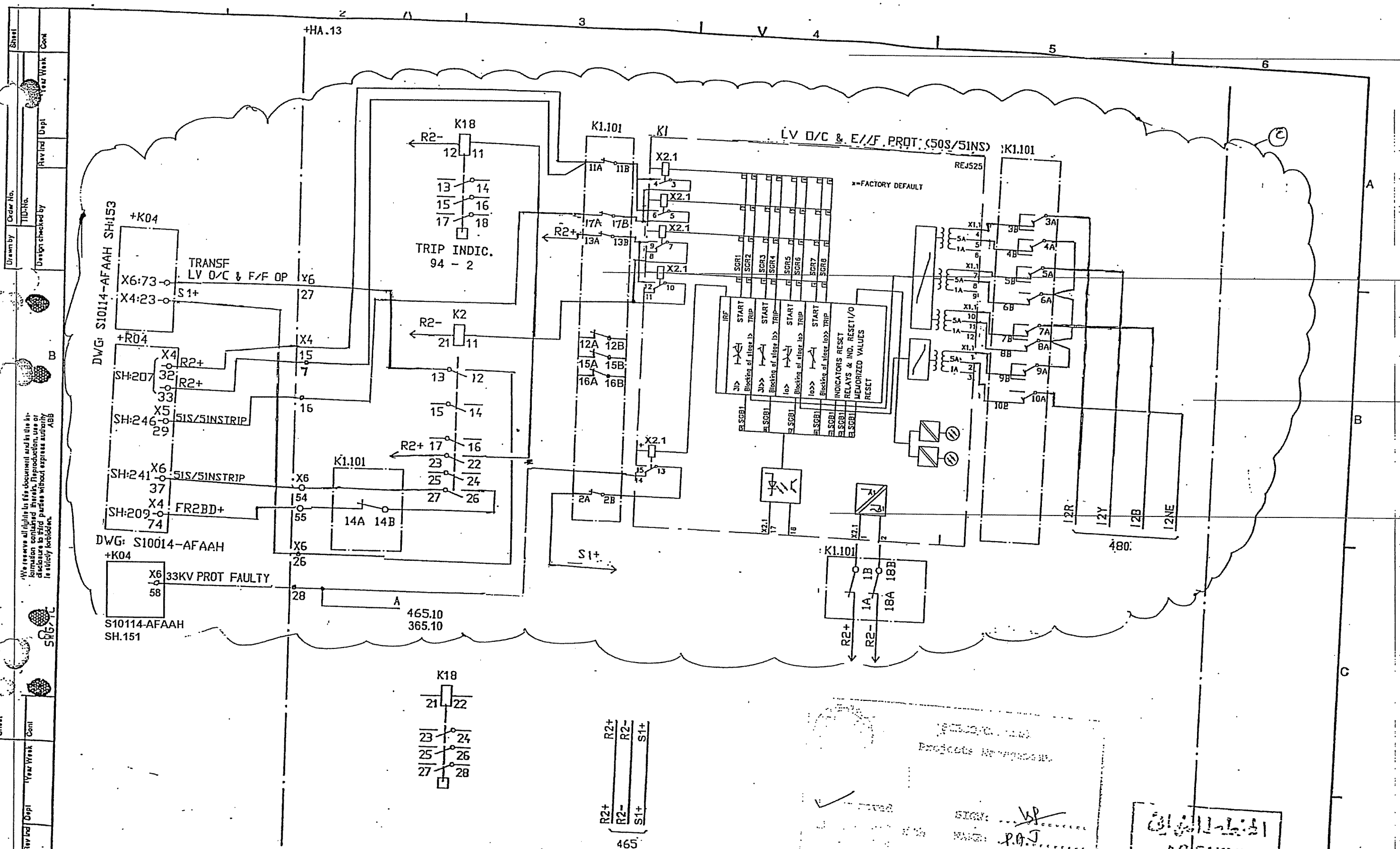
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

Iss by Dept
TDCF
Year Week
90 36

L 9743.1017
XL 824 028-FBR

Rev	Ind	Sheet
1	476	478

ADD
FBR



Sheet 1 of 1
 Order No. TID No.
 Design checked by
 Rev'd Dep't Year Week Cont
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 Form No. ABB
 Rev'd Dep't Year Week Cont
 Rev'd Dep't Year Week Cont

SYMBOL ID /D:XL824028-FBR:128/0

92-07-02 18.53

2	SCECO SNAG	LS	92 26	=10
1	AS BUILT	LS	91 21	33kV INCOMING TRANSFORMER BAY
Rev'd	Rev'd	App'd	Year Week	OVERCURRENT PROT 33kV

Design checked by
 B NILSSON
 Drawing checked by
 L SVENSSON
 Drawn by
 SK

CIRCUIT DIAGRAM
 S/S 8501 132/33kV
 SCECO CENTRAL SAUDI ARABIA
 ABB HV SWITCHGEAR

Use by Dept Year Week
 TDCF 90 36

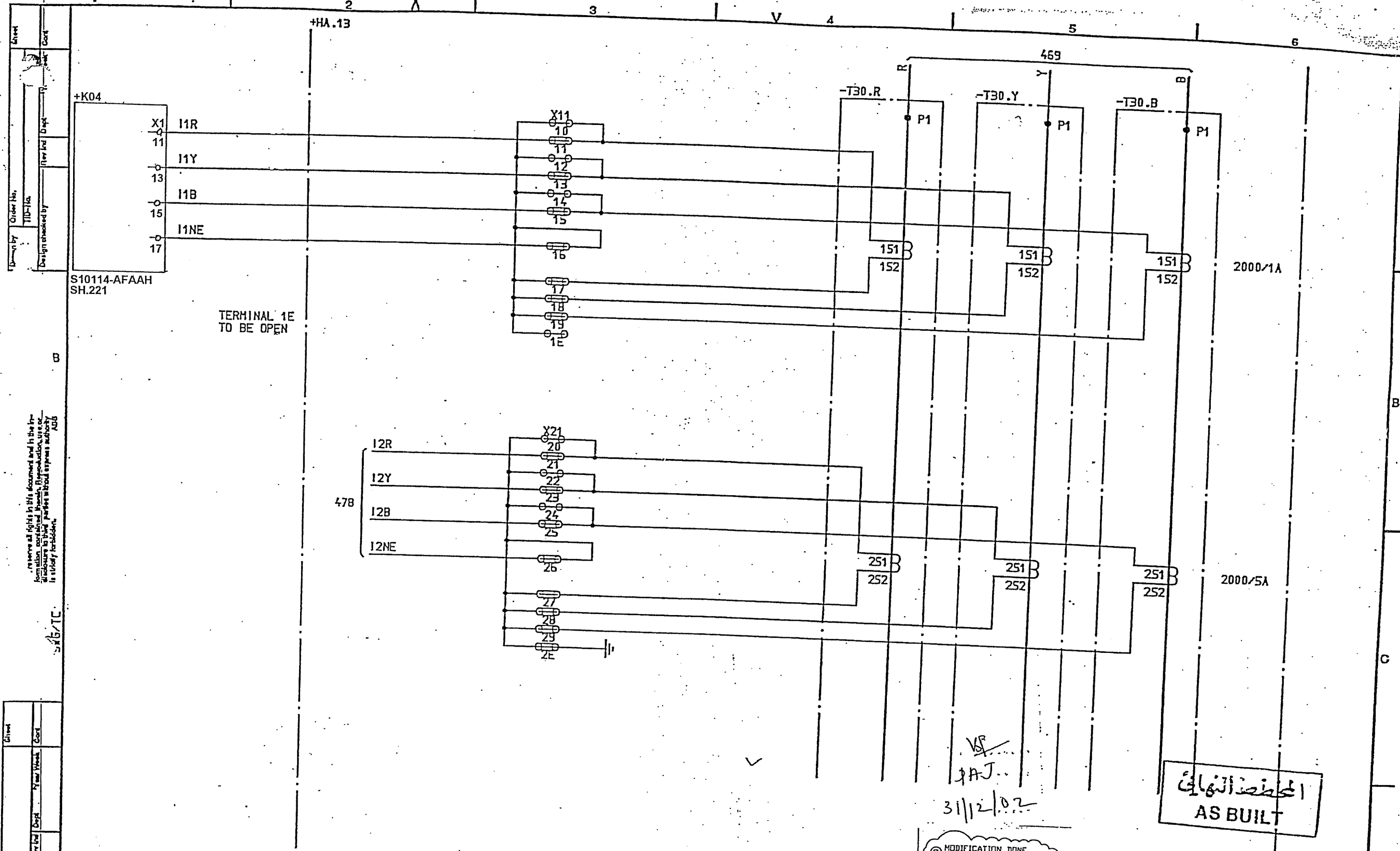
L 9743.1017
 XL 824 028-FBR

How Inc	Sheet
Long	478
How Inc	Cont
2	480

MODIFIED

31/11/2001
 ASEULT

Project No. 92-07-02
 Project Name: 33kV INCOMING TRANSFORMER BAY
 Date: 3.11.2002
 Signature: [Signature]
 Name: P.O.J.

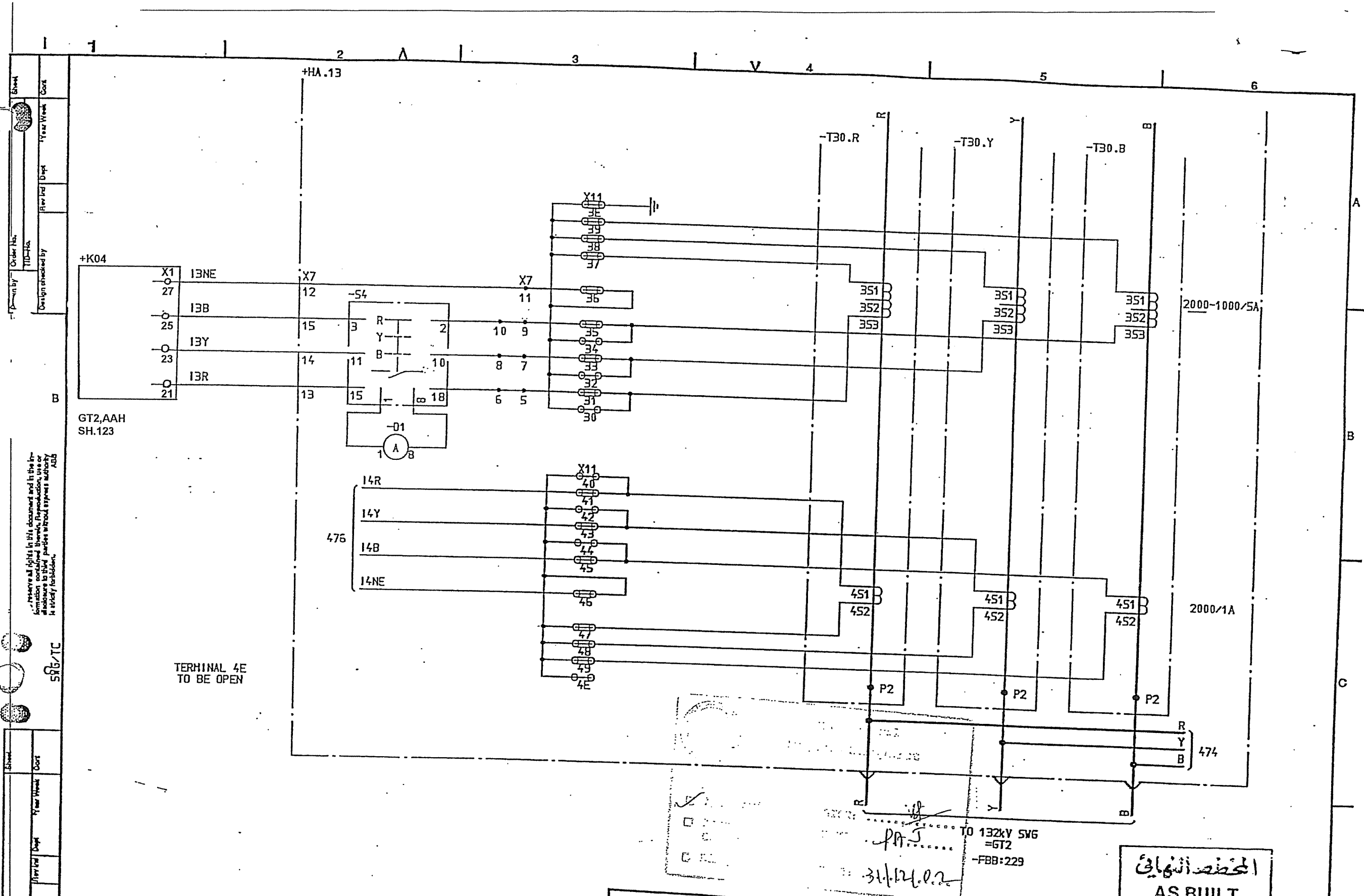


المخطط النهائي
AS BUILT

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UNDER CONTRACT 516/20/3

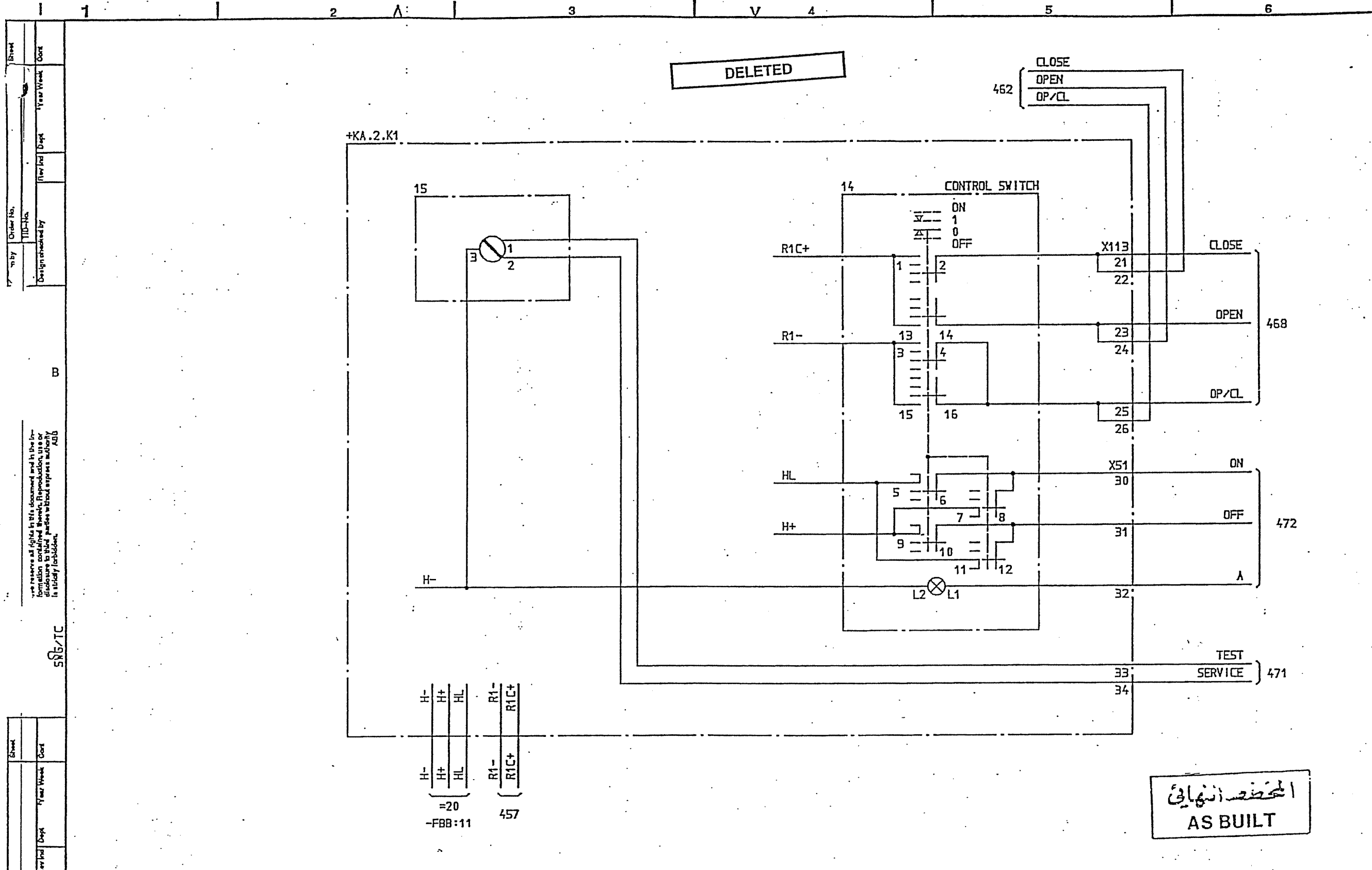
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						B NILSSON								
						Checked by								
						L SVENSSON								
	AS BUILT				CURRENT TRANSFORMER -T30	Drawn by	ABB HV SWITCHGEAR	Iss by Dept	Year Week					
	Revising					SK		TDCF	90 36					
		2							5					



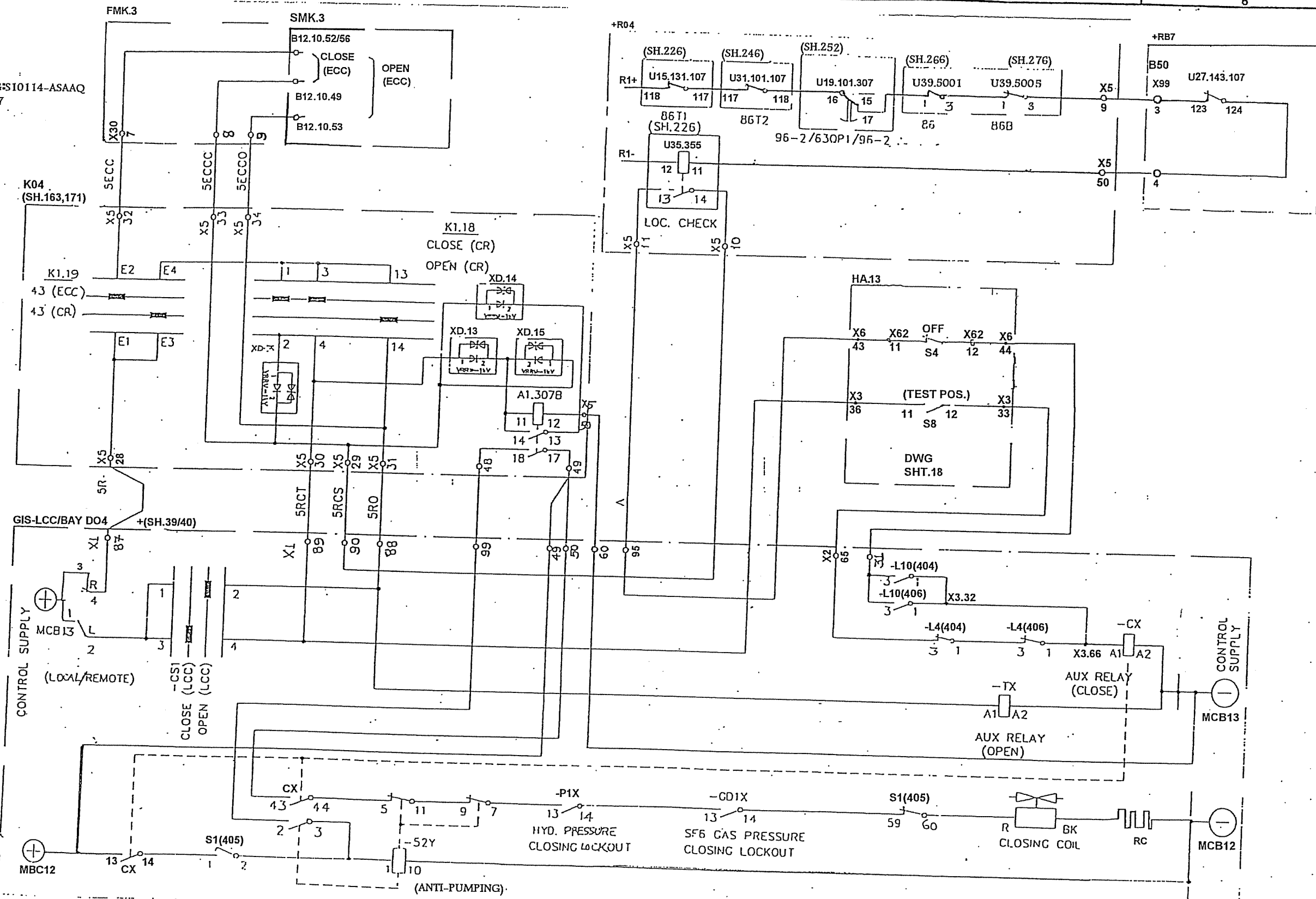
SYMBOL ID /D:XL824028-FBR:481/0		DATE 91-06-05 09.31		MODIFIED	
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1		15 91 21		CURRENT TRANSFORMER -T30	
ABB		Design checked by		B NILSSON	
Flow Ind		Drawing checked by		L SVENSSON	
2		Drawn by		SK	
CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA	
ABB HV SWITCHGEAR		L 9743.1017		XL 824 028-FBR	
TDCF 90 36		Ling		481	
5		Cost		485	

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2		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Year Week 91 21</p> </div> <div style="width: 45%;"> <p>Year Week 90 08</p> </div> </div>	
3		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Year Week 91 21</p> </div> <div style="width: 45%;"> <p>Year Week 90 08</p> </div> </div>	
4		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Year Week 91 21</p> </div> <div style="width: 45%;"> <p>Year Week 90 08</p> </div> </div>	
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6		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Year Week 91 21</p> </div> <div style="width: 45%;"> <p>Year Week 90 08</p> </div> </div>	



SYMBOL ID /D:XL824028-FBR:490/0		DATE 91-05-05 09.31		Design checked by B NILSSON		CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA		How Incl Sheet	
=10		33kV INCOMING TRANSFORMER BAY		Drawing checked by S STRIDSHAN		SCECO CENTRAL SAUDI ARABIA		Long Sheet	
AS BUILT		L5 91 21		Drawn by SK		ABB HV SWITCHGEAR		490	
Revision		Appd Year Week		See by Dept Year Week		TCF 90 08		How Incl Sheet	
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						XL 824 028-FBR		491	

DWG: S10114-ASAAQ
SH:27



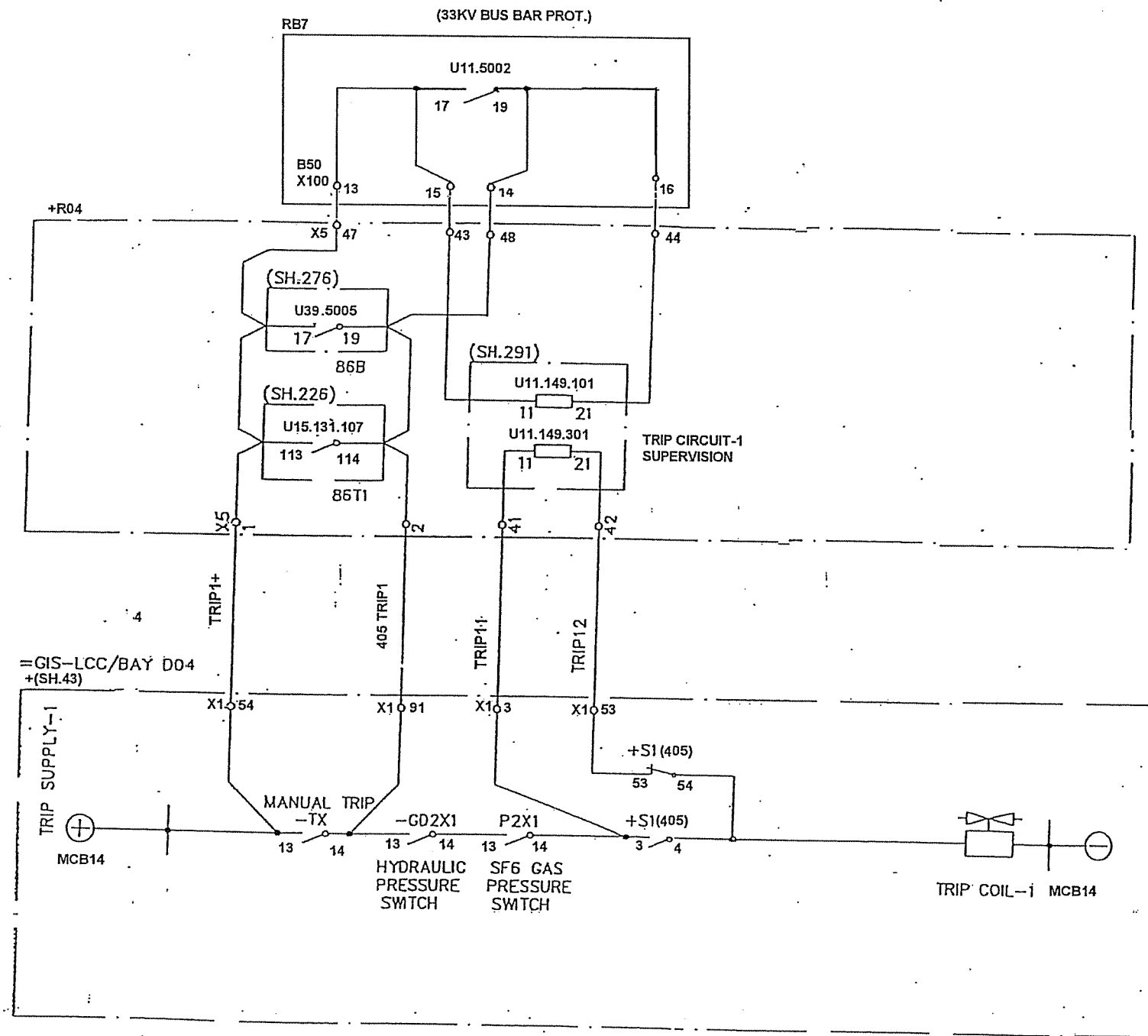
SYMBOL

DATE 91-05-03 08.39

<p>1 AS-BUILT</p>	<p>132/33kV GRID TRANSFORMER 132kV CB.405 CLOSING CIRCUIT =GT2</p>	<p>Design checked by B NILSSON Drawing checked by S STRIDSHAN Drawn by SK</p>	<p>CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA ABB HV SWITCHGEAR</p>	<p>L 9743.1017 XL 824 028-FBR</p>
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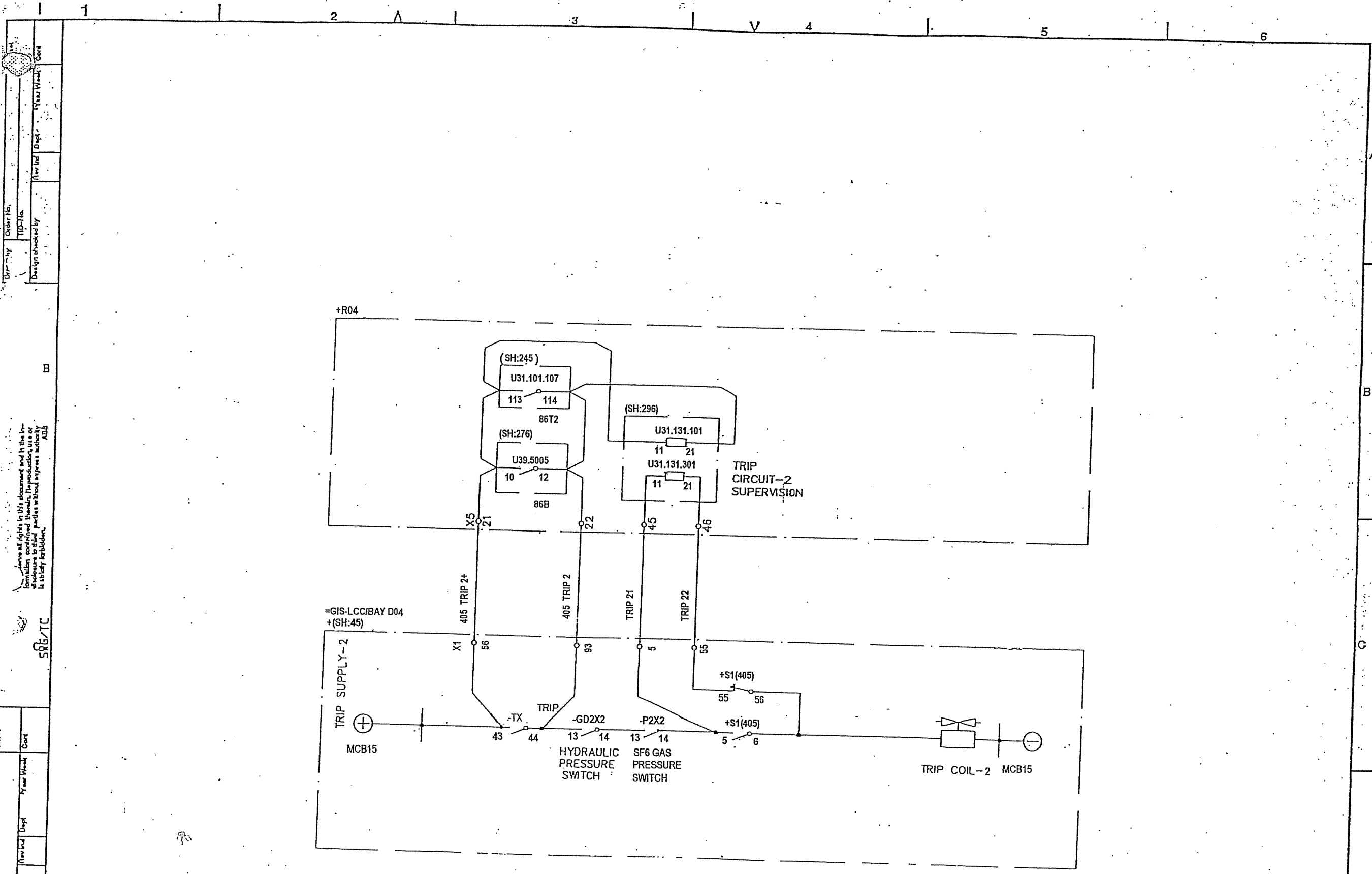
491
492

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Based on

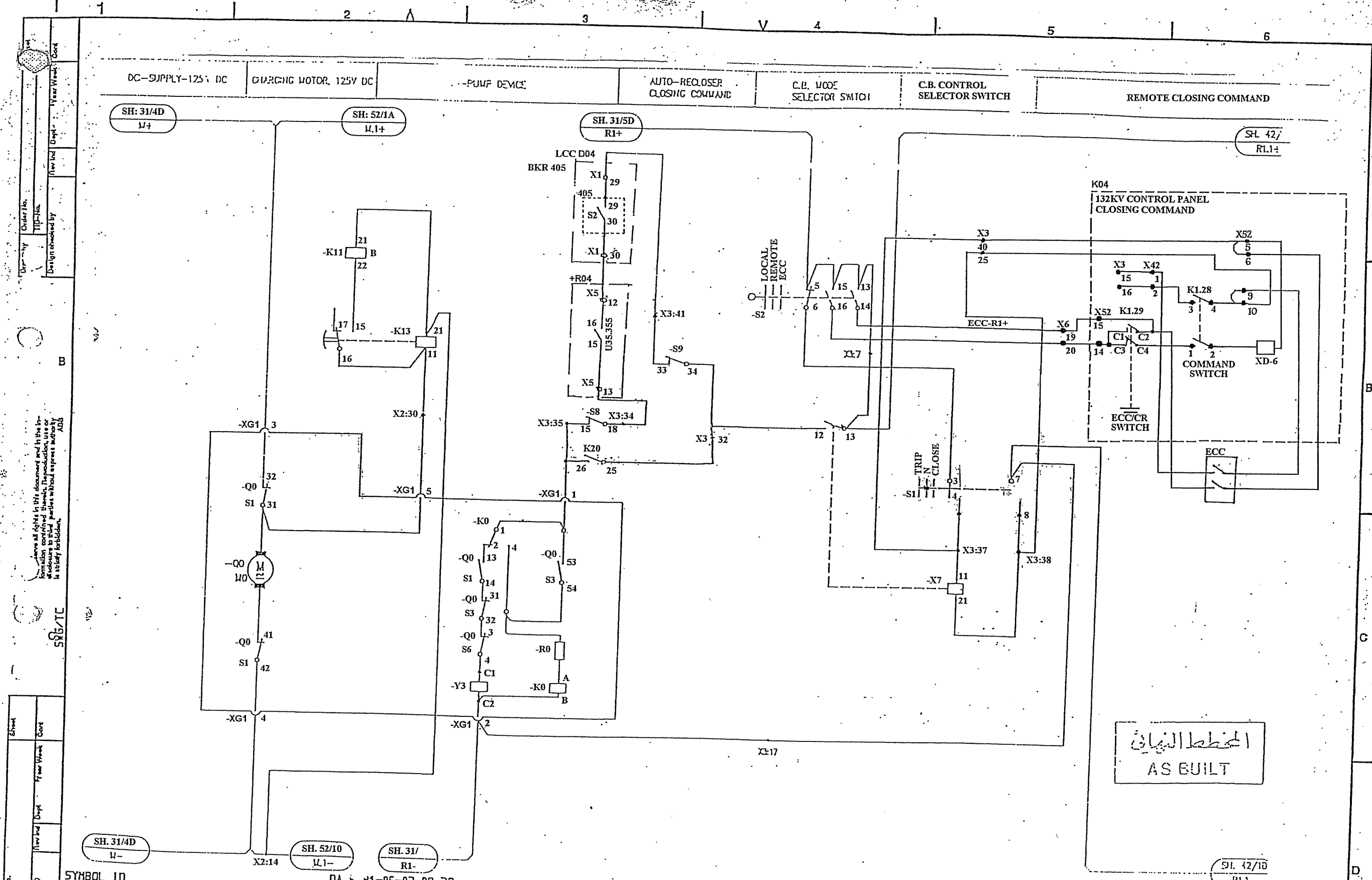
Rev	Issued	By	Checked	Approved	Issued 01 44 KARTHIK Issued 01 44 KAMAL AL-MUHANNA 8501, 132/33/13.5kV -CRB, CONTRACT NO. 516/20/3	132/33KV GRID TRANSFORMER-2 BREAKER-405 TRIPPING COIL-1 =GT2 HV SWITCHGEAR	Design Dept L9743-1017 XL 824 028-FBR	Rev	Issued	SHT 492 CONT 493
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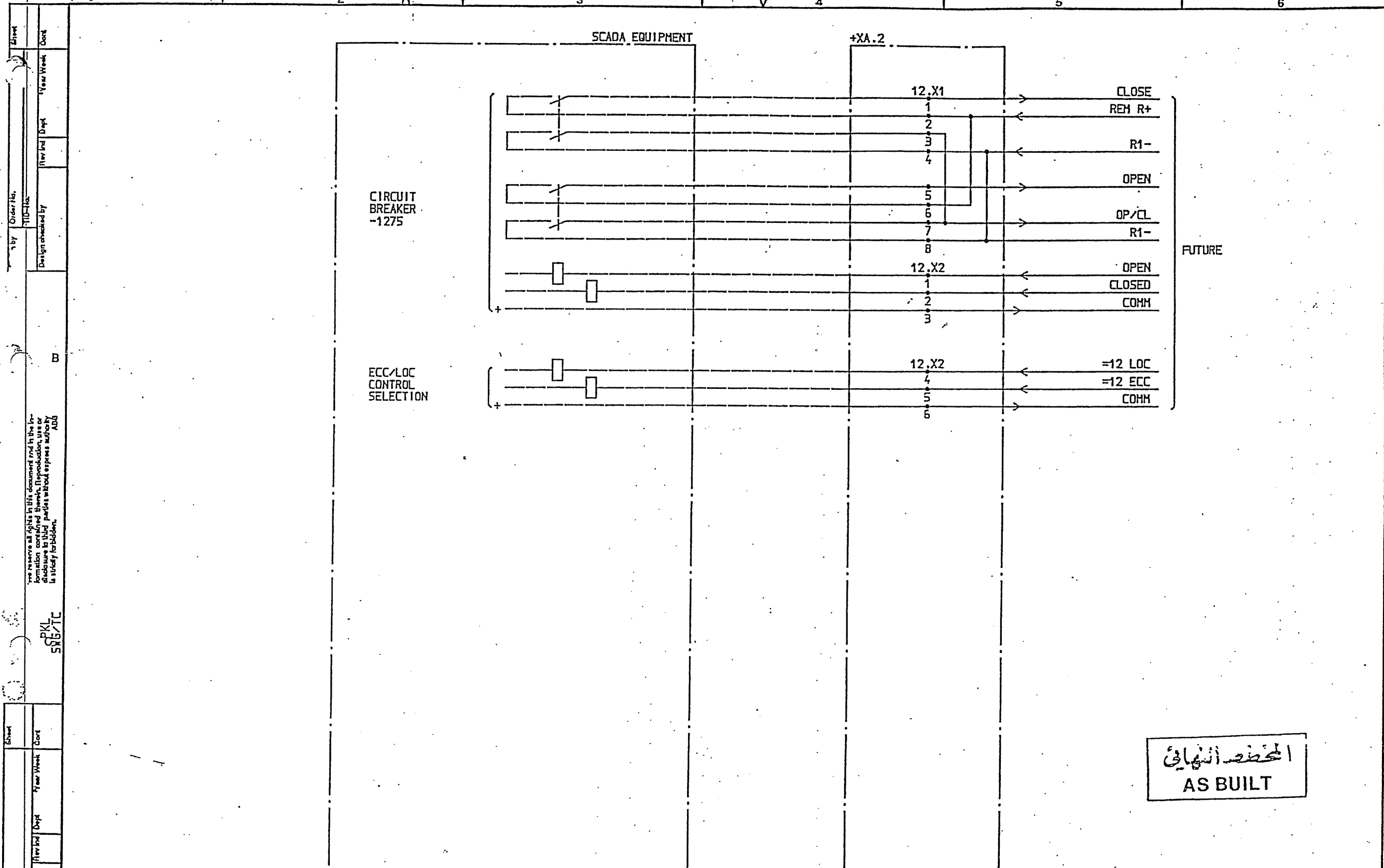
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Drawn by	Order No.	Year Week	Cont
Design checked by	Year Week	Cont	

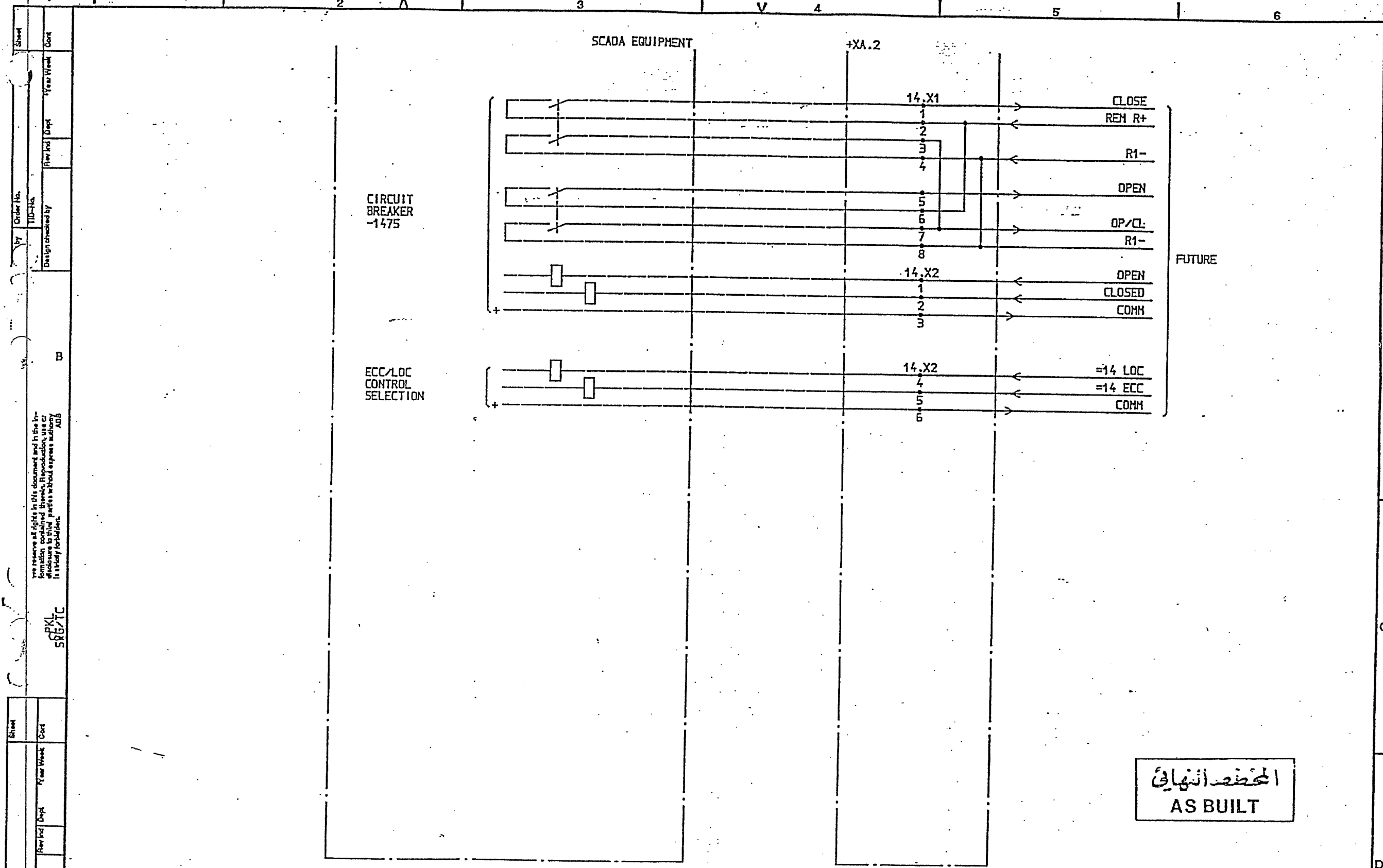
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SYMBOL ID		DATE 91-05-03 08.39		=3		132/33kV GRID TRANSFORMER- 2		BEAKER-475		=GT2		CIRCUIT DIAGRAM		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		L 9743.1017		XL 824 028-FBR		Rev No. Sheet	
1- A5-BUILT		L5 91-21		2		3		4		5		6		7		8		9		10		11	
1- A5-BUILT		L5 91-21		2		3		4		5		6		7		8		9		10		11	
1- A5-BUILT		L5 91-21		2		3		4		5		6		7		8		9		10		11	
1- A5-BUILT		L5 91-21		2		3		4		5		6		7		8		9		10		11	



SYMBOL ID /D:XL824028-FBR:562/0		DATE 91-06-05 09.31			
Design checked by	Drawn by	Appd	Year Week	SCADA INTERFACE EQUIPMENT	Design checked by
1 AS BUILT	1A	LS	91 21		B NILSSON
Rev Inst	Revision	Appd	Year Week		Drawing checked by
1					S STRIDSHAN
					Drawn by
					IA
					CIRCUIT DIAGRAM
					S/S 8501 132/33kV
					SCECO CENTRAL SAUDI ARABIA.
					ABB HV SWITCHGEAR
					See by Dept
					TCF
					Year Week
					90 10
					5
					L 9743.1017
					XL 824 028-FBR
					Rev Inst
					1
					Sheet
					562
					512



المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:612/0

DATE 91-06-05 09.31

1		AS BUILT	LS	91	21	=14 33kV FUTURE LINE	Design created by B NILSSON	CIRCUIT DIAGRAM	L 9743.1017	
2						SCADA INTERFACE EQUIPMENT	Drawing created by S STRIDSMAN	S/S 8501 132/33kV	XL 824 028-FBR	
3							Drawn by IA	SCECO CENTRAL SAUDI ARABIA	Long 612	
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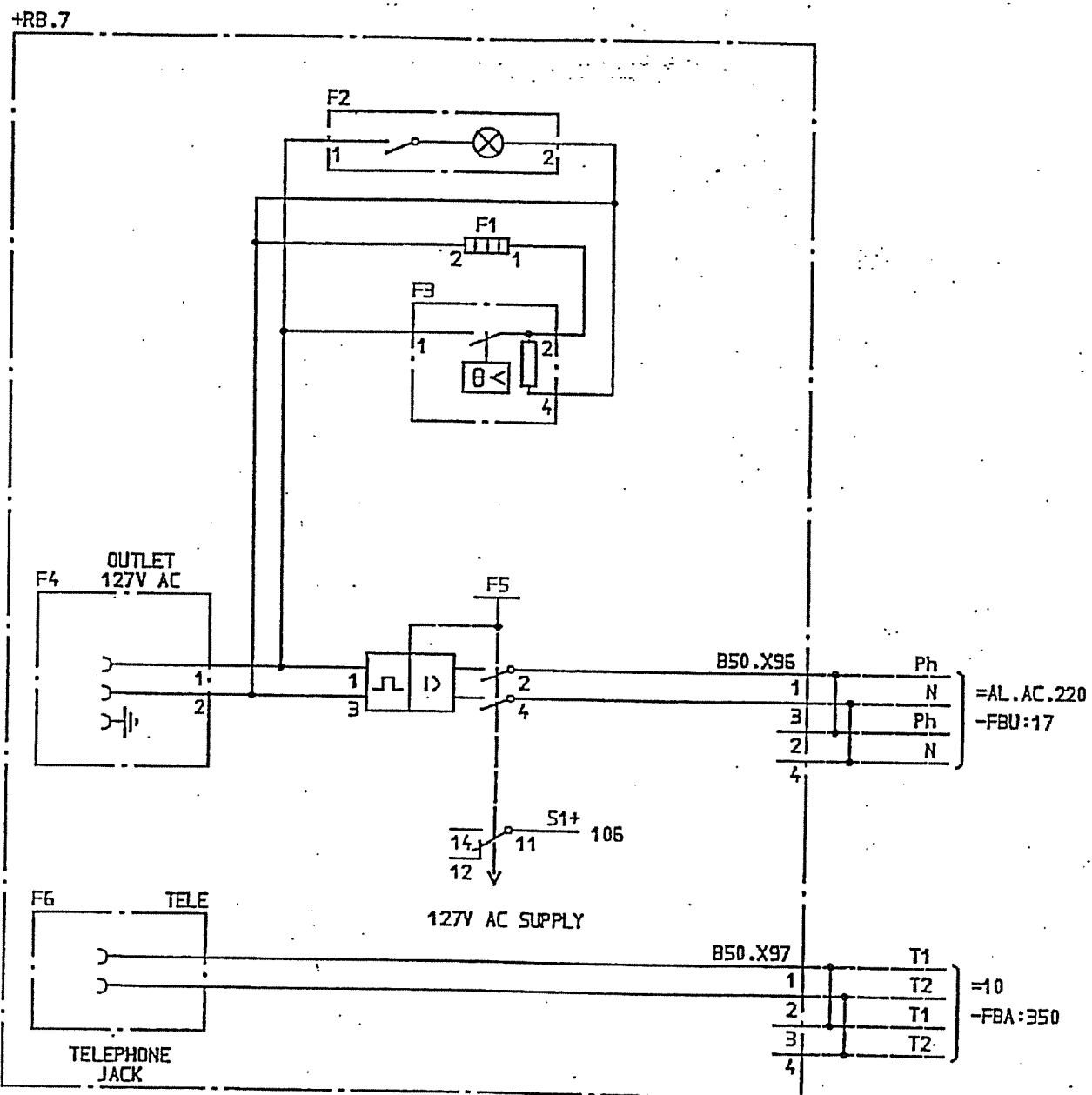
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AS BUILT

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Year Week	Cost

Design checked by	Year Week
Year Week	Cost

Design checked by	Year Week
Year Week	Cost



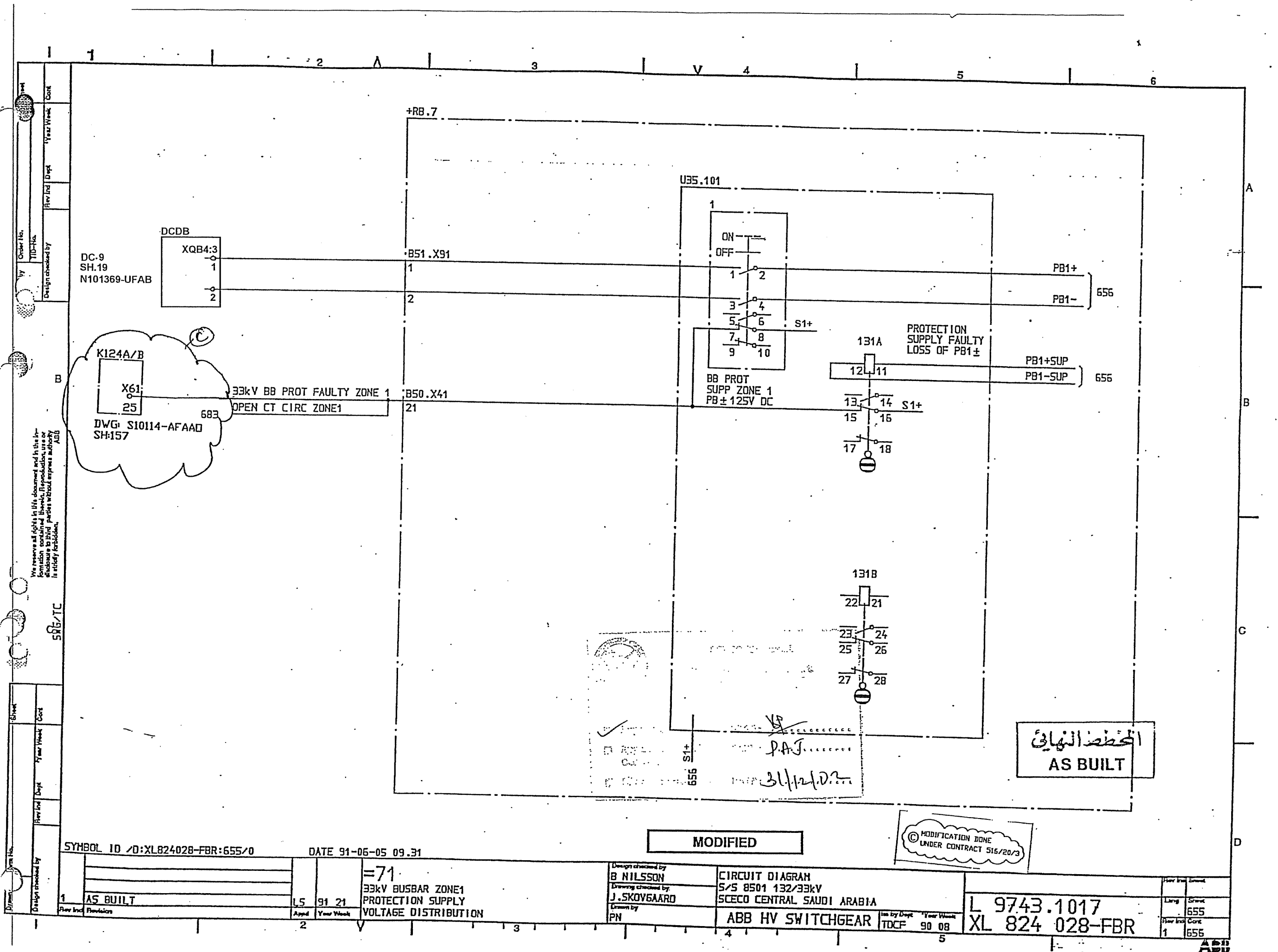
المخطط النهائي
AS BUILT

SYMBOL ID /D:XL824028-FBR:654/0

DATE 91-06-05 09.31

AS BUILT	LS	91 21	71	33kV BUSBAR ZONE 1 AC AND TELEPHONE JACKET CIRCUITS VOLTAGE DISTRIBUTION	Design checked by B NILSSON	CIRCUIT DIAGRAM S/S 8501 132/33kV SCECO CENTRAL SAUDI ARABIA	Rev Ind	Sheet
					Drawn by J SKOVGAARD		Long	654
					Drawn by GH	ABB HV SWITCHGEAR	Rev Ind	Cost
						TCF 90 08	1	655

ABB



Drawn by	Checked by	Design checked by	Order No.	Sheet
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Year Week	Year Week	Year Week	Year Week	Year Week

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SYMBOL ID /D:XL824028-FBR:656/0

DATE 91-06-05 09.31

1	AS BUILT	L5	91 21
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=71
33kV BUSBAR ZONE 1
PROTECTION AND ALARM SUPPLY
VOLTAGE DISTRIBUTION

Design created by
B NILSSON
Drawing checked by
B MALMROS
Drawn by
IA

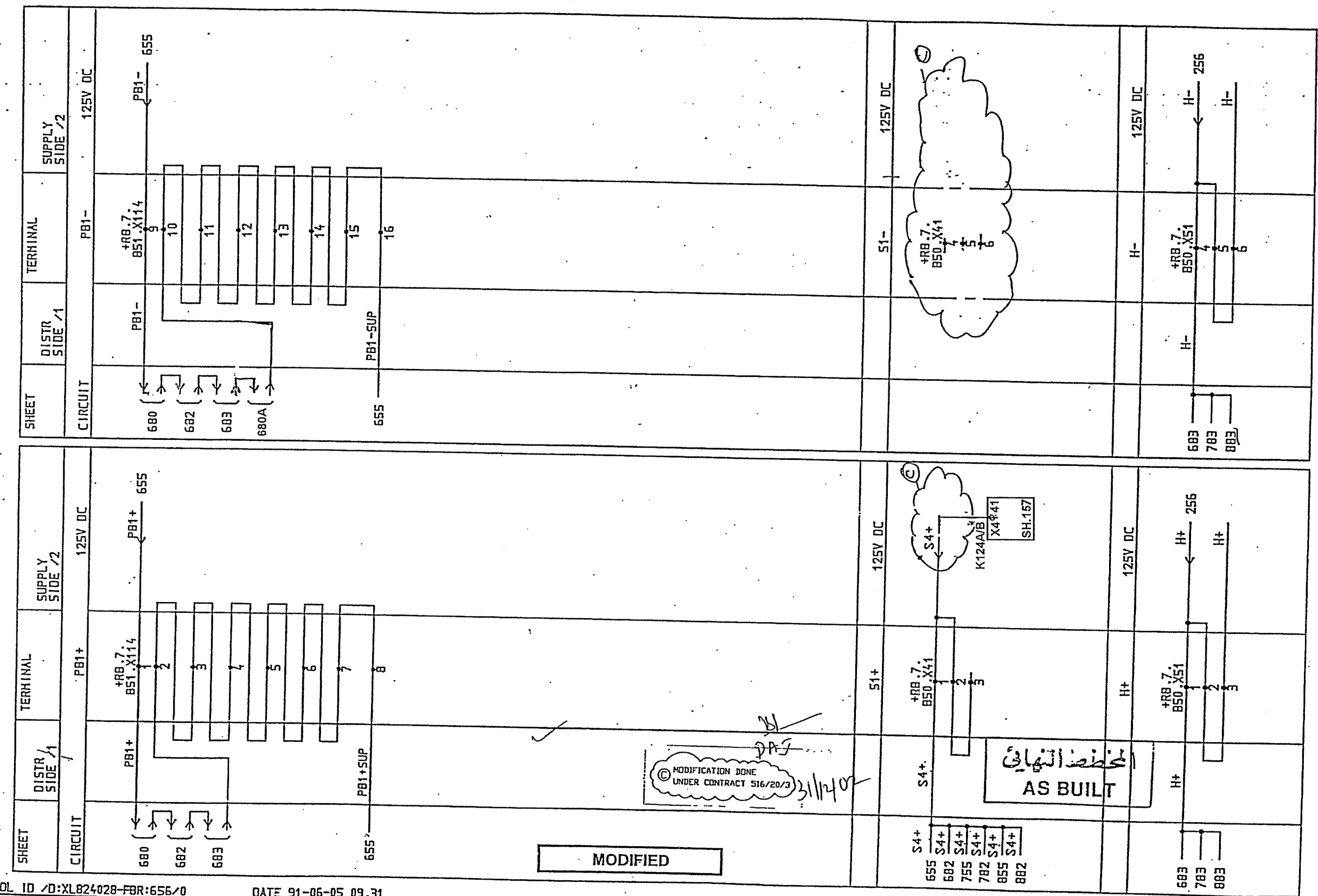
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S/S 8501 132/33kV
SCECO CENTRAL

ABB HV SWITCHGEAR

TDCF 90 16

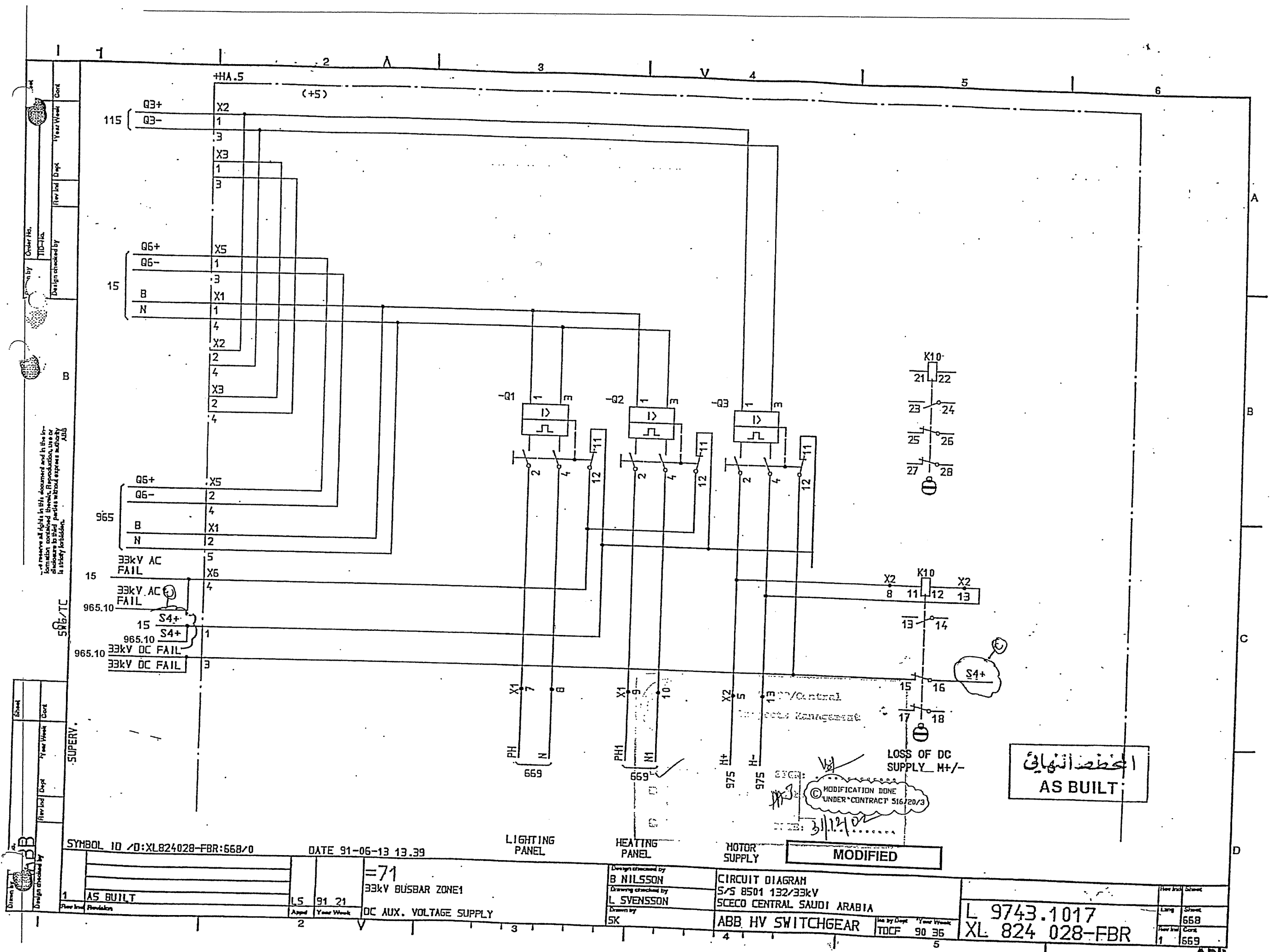
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XL 824 028-FBR

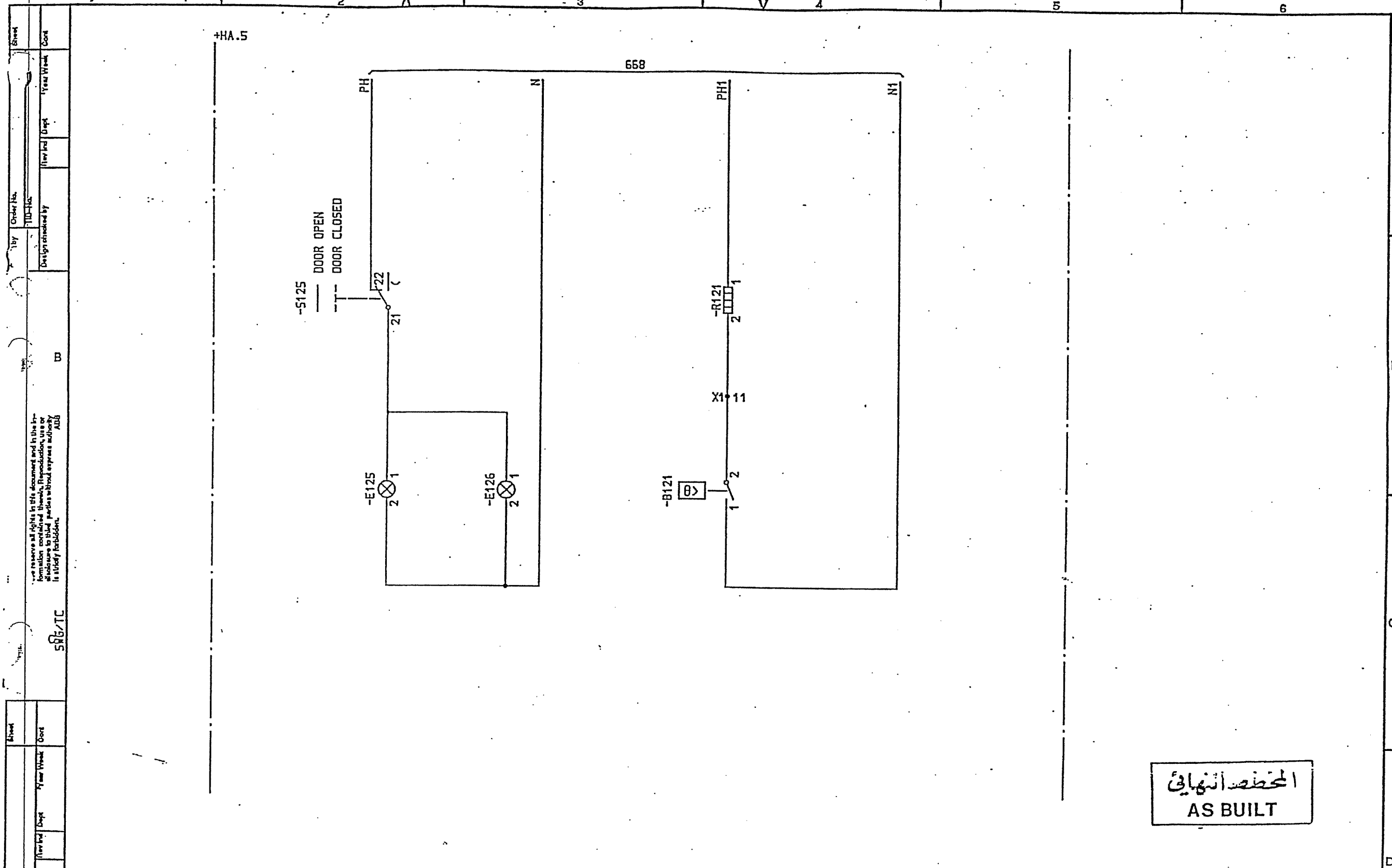
Year Week	Year Week
656	658



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UNDER CONTRACT 516/20/3
31/1/40

المخطط النهائي
AS BUILT



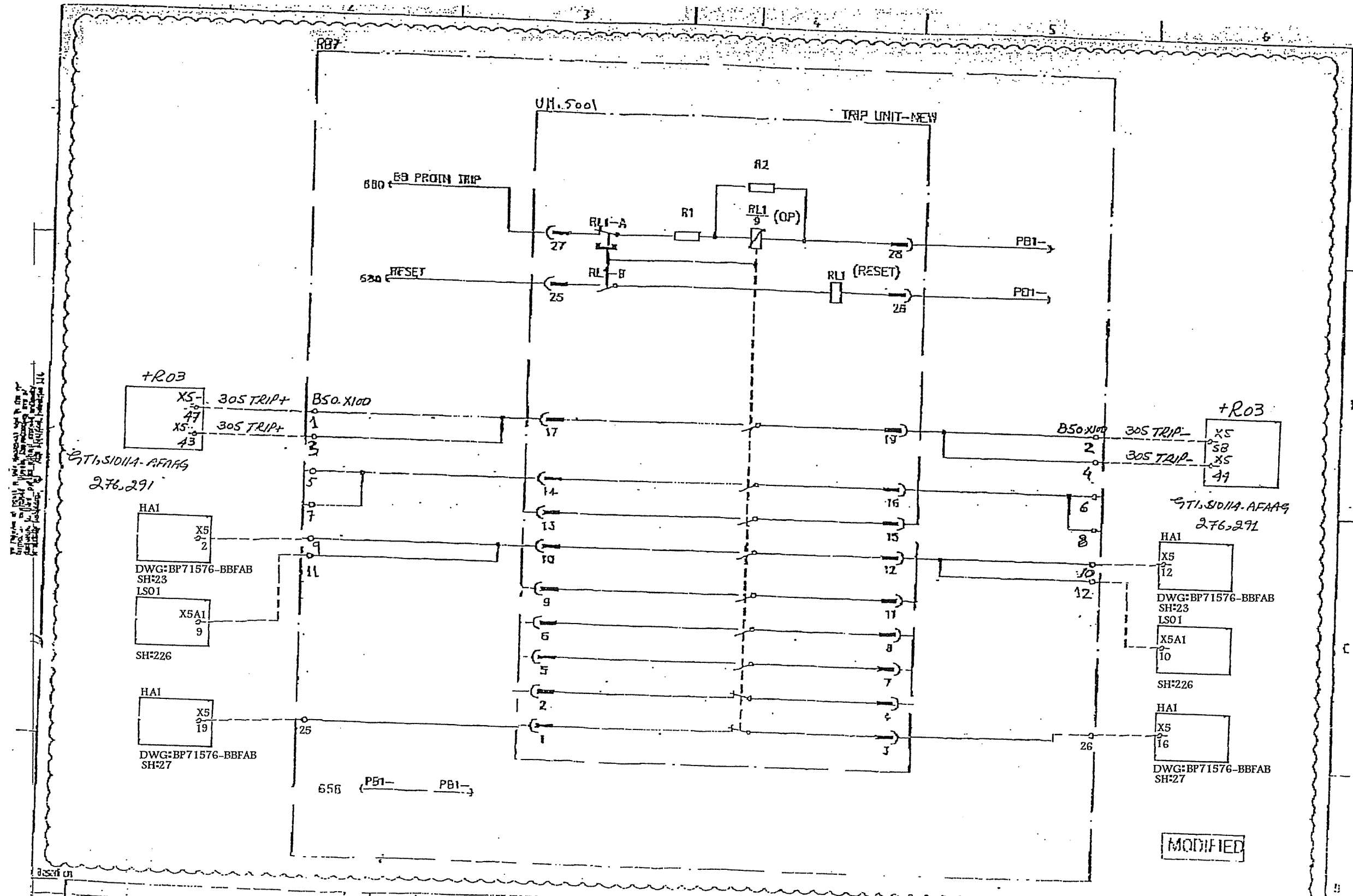


SYMBOL ID /D:XL824028-FBR:669/0		DATE 91-06-05 09.32		Design checked by B NILSSON		CIRCUIT DIAGRAM		Rev Rev Sheet	
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1		L5 91 21		HEATER AND LIGHT		ABB HV SWITCHGEAR		Rev Rev Sheet	
						TDCF 90 36		Long Sheet	
								Rev Rev Sheet	
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المخطط النهائي
AS BUILT

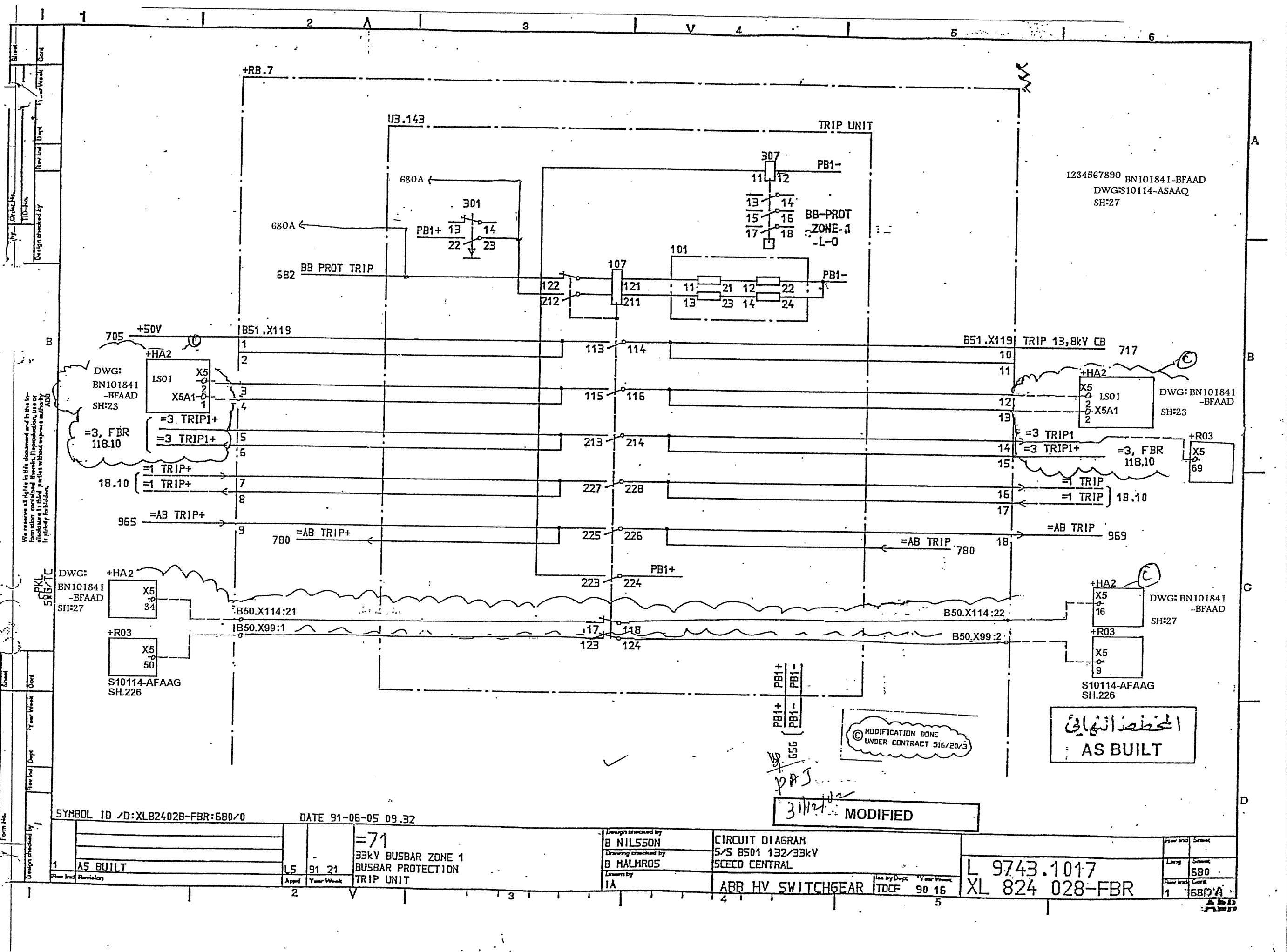
L 9743.1017
XL 824 028-FBR

AS BUILT



MODIFIED

03 21 KARTHEK 03 21 LPAUL S/S 8401, 132/11/13.8KV SEC-CRB, CONTRACT NO. 515/20/3	=71 33KV BUSBAR ZONE I BUS BAR PATH. TRIP UNIT 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017
03 21 KARTHEK 03 21 LPAUL S/S 8401, 132/11/13.8KV SEC-CRB, CONTRACT NO. 515/20/3	=71 33KV BUSBAR ZONE I BUS BAR PATH. TRIP UNIT 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017
03 21 KARTHEK 03 21 LPAUL S/S 8401, 132/11/13.8KV SEC-CRB, CONTRACT NO. 515/20/3	=71 33KV BUSBAR ZONE I BUS BAR PATH. TRIP UNIT 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017
03 21 KARTHEK 03 21 LPAUL S/S 8401, 132/11/13.8KV SEC-CRB, CONTRACT NO. 515/20/3	=71 33KV BUSBAR ZONE I BUS BAR PATH. TRIP UNIT 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017
03 21 KARTHEK 03 21 LPAUL S/S 8401, 132/11/13.8KV SEC-CRB, CONTRACT NO. 515/20/3	=71 33KV BUSBAR ZONE I BUS BAR PATH. TRIP UNIT 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017	19743.1017 19743.1017



1234567890 BN101841-BFAAD
DWG:BN101841-BFAAD
SH:27

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PKL
586/1C

Sheet
Year Work
Dept
Design checked by
Form No.

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=3, TRIP1+
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=AB TRIP+
965
780 =AB TRIP+

DWG: BN101841-BFAAD SH:27
+HA2
X5 34
+R03
X5 50
S10114-AFAAG SH.226

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X5 2
LS01
X5A1 2
=3, FBR 118.10
=3, TRIP1+
=1 TRIP
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18.10
=AB TRIP
969

DWG: BN101841-BFAAD SH:27
+HA2
X5 16
+R03
X5 9
S10114-AFAAG SH.226

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المخطط النهائي
AS BUILT

31/12/2002

MODIFIED

SYMBOL ID /D:XL824028-FBR:680/0 DATE 91-06-05 09.32

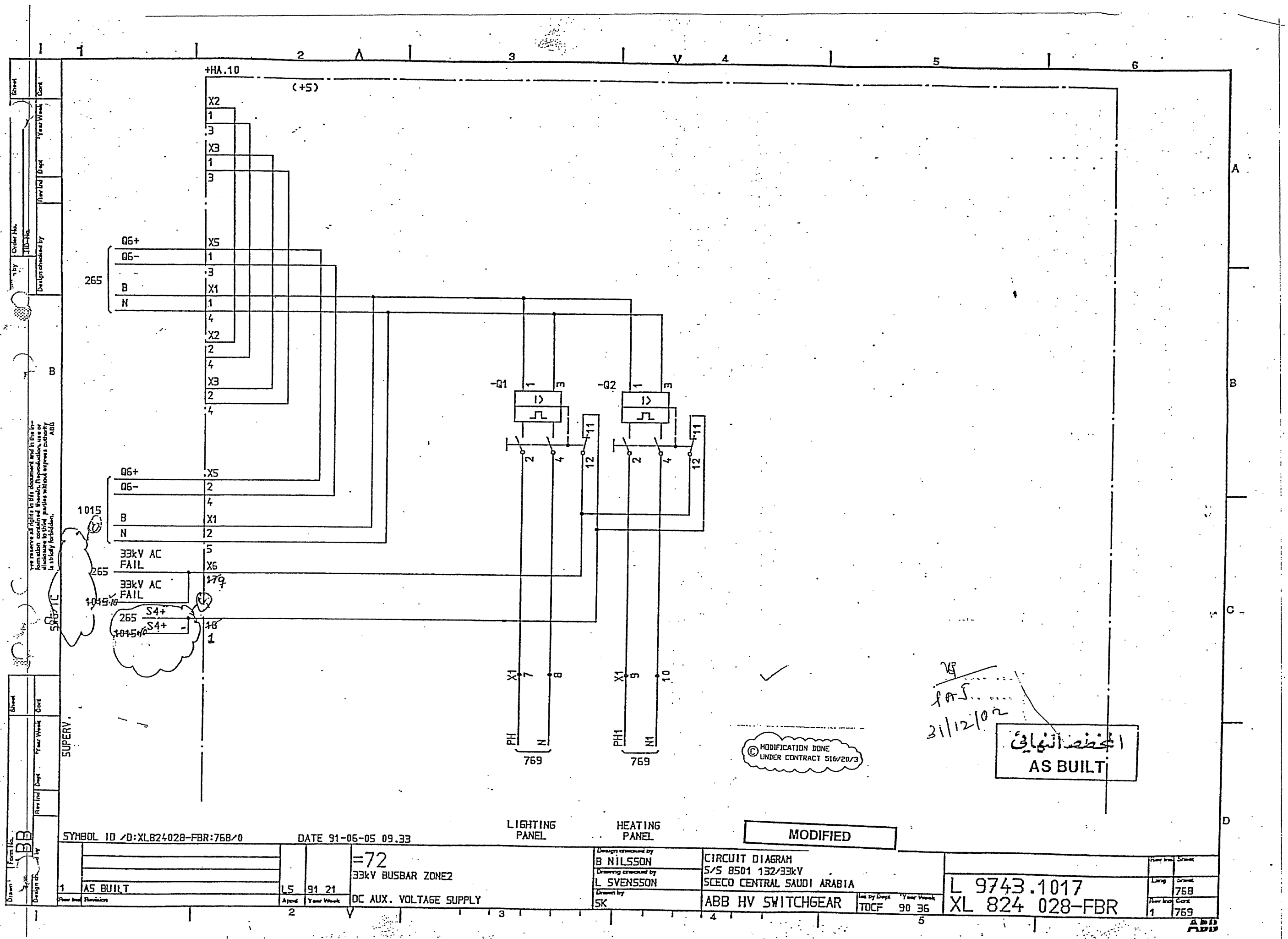
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2		Appd	Year Week	

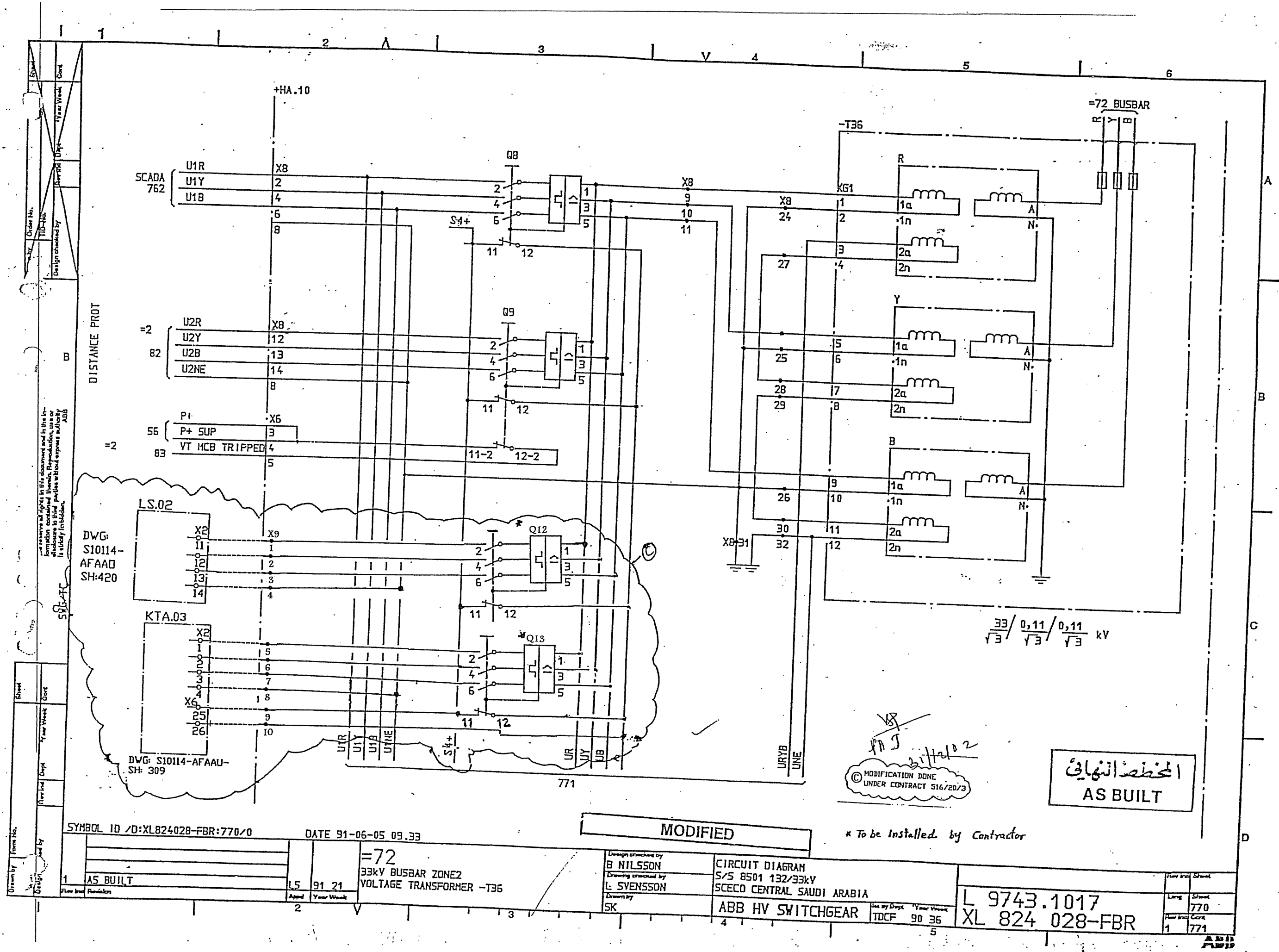
Design checked by
B NILSSON
Drawing checked by
B HALMROS
Drawn by
IA

CIRCUIT DIAGRAM
S/S B501 132/33kV
SCECO CENTRAL
ABB HV SWITCHGEAR TDCF 90 16

L 9743.1017
XL 824 028-FBR
1 680

How and
Larg
How and
1 680





DISTANCE PROT

DWG: S10114-AFAAD SH:420

DWG: S10114-AFAAU SH: 309

SYMBOL ID /D:XL824028-FBR:770/0

DATE 91-06-05 09.33

MODIFIED

* To be installed by Contractor

المخطط النهائي
AS BUILT

=72
33kV BUSBAR ZONE2
VOLTAGE TRANSFORMER -T36

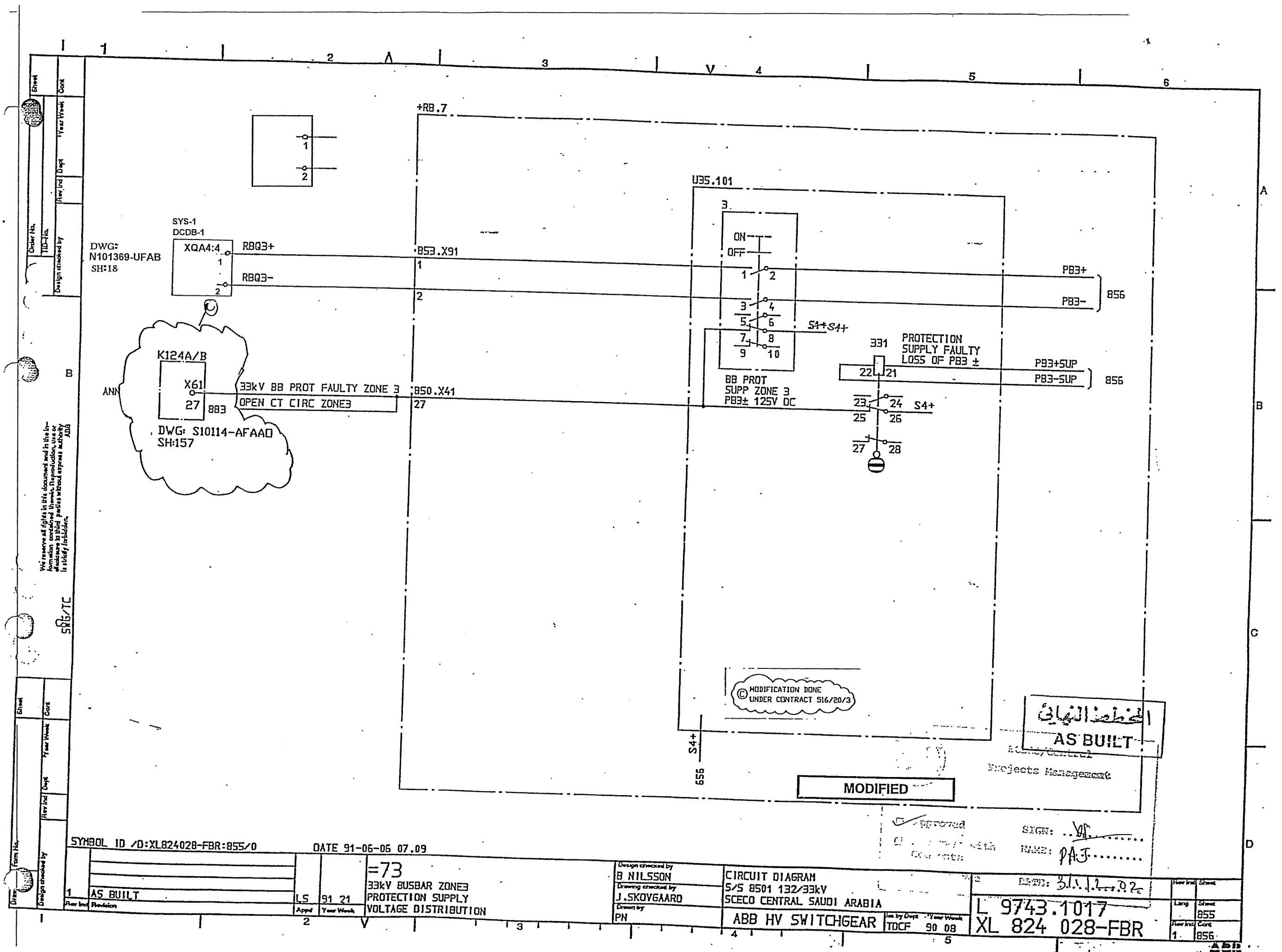
Design checked by
B NILSSON
Drawing checked by
L SVENSSON
Drawn by
SK

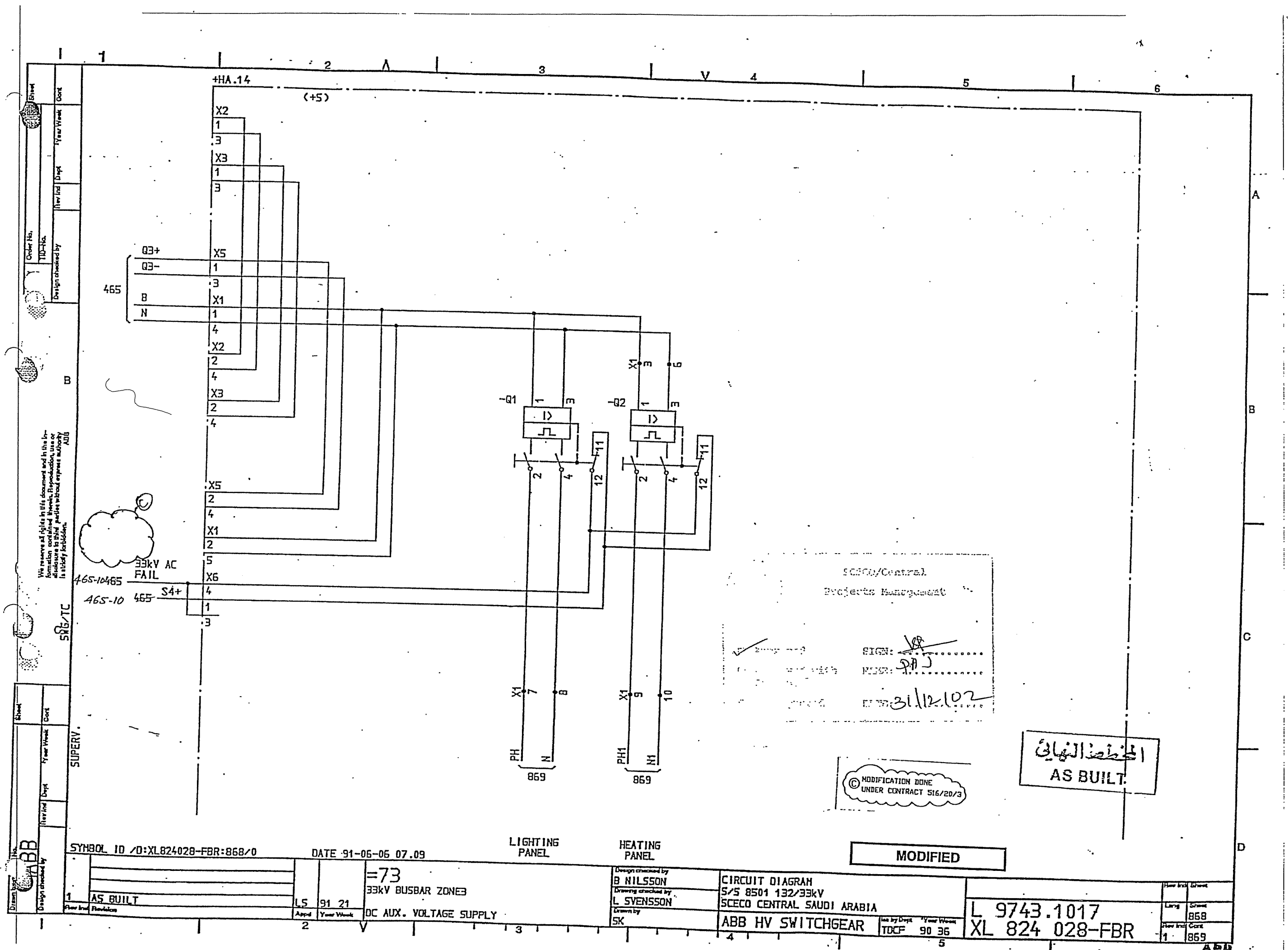
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL SAUDI ARABIA
ABB HV SWITCHGEAR

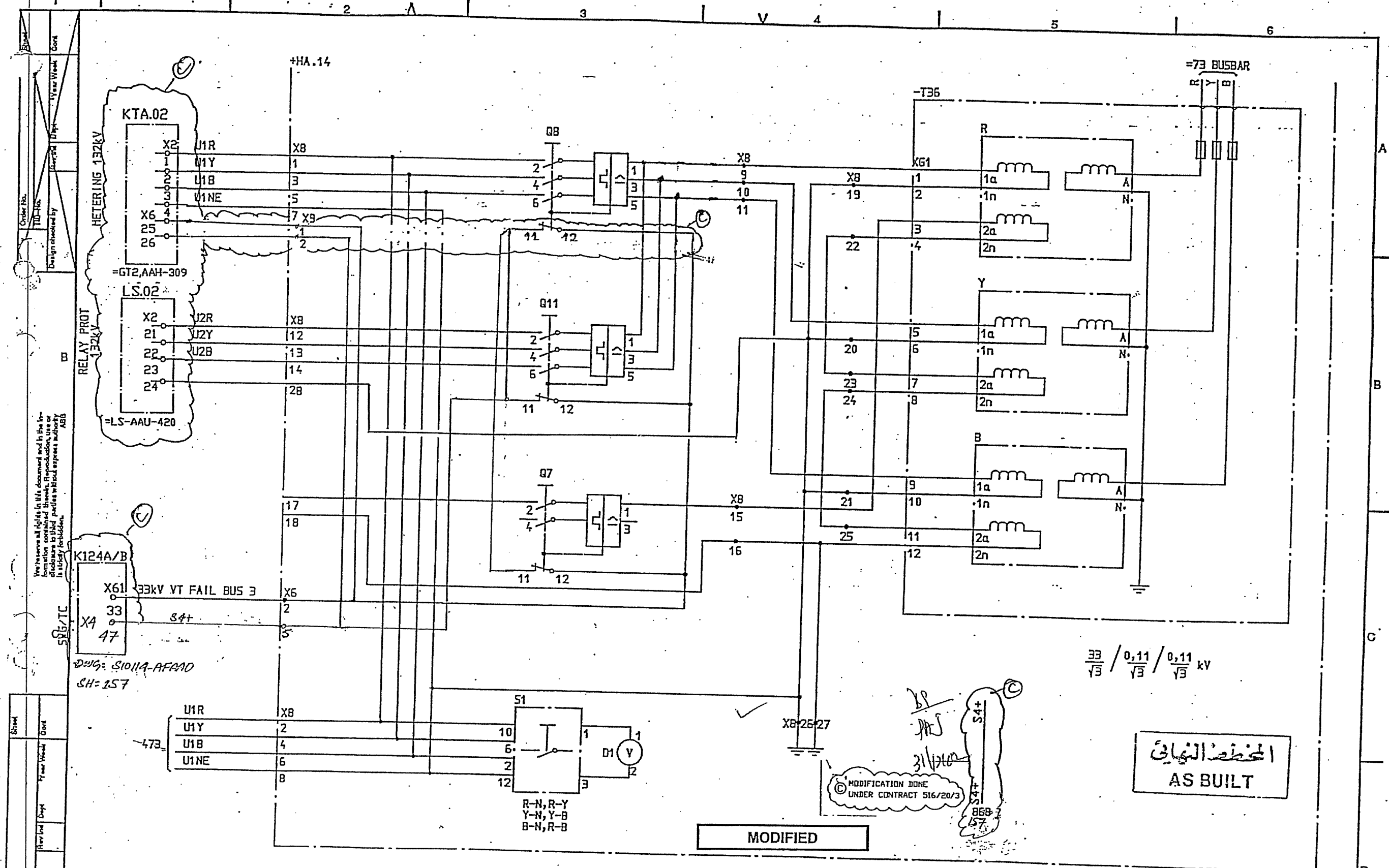
L 9743.1017
XL 824 028-FBR

Rev	Drawn	Checked
1	770	771

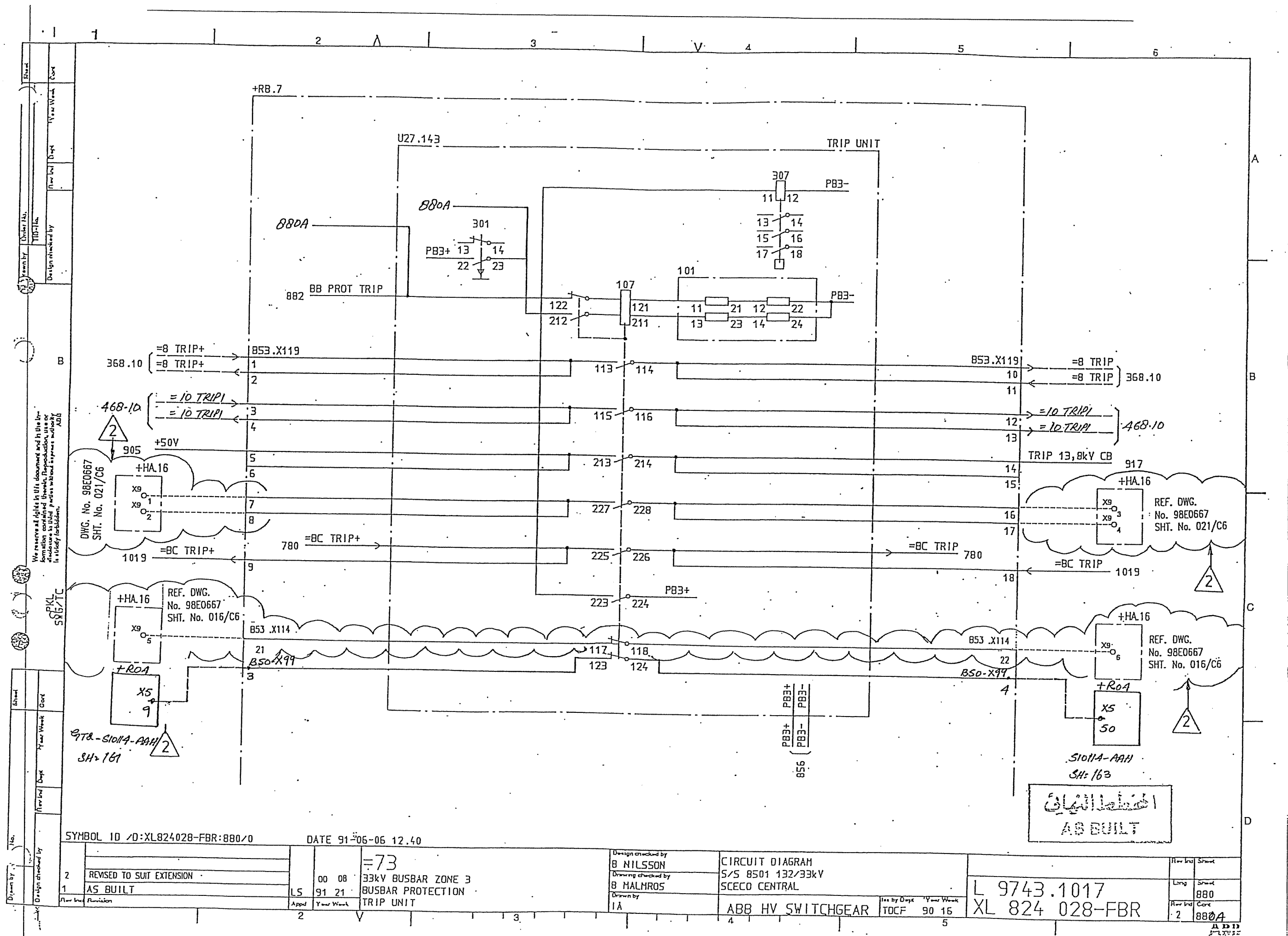
ABB

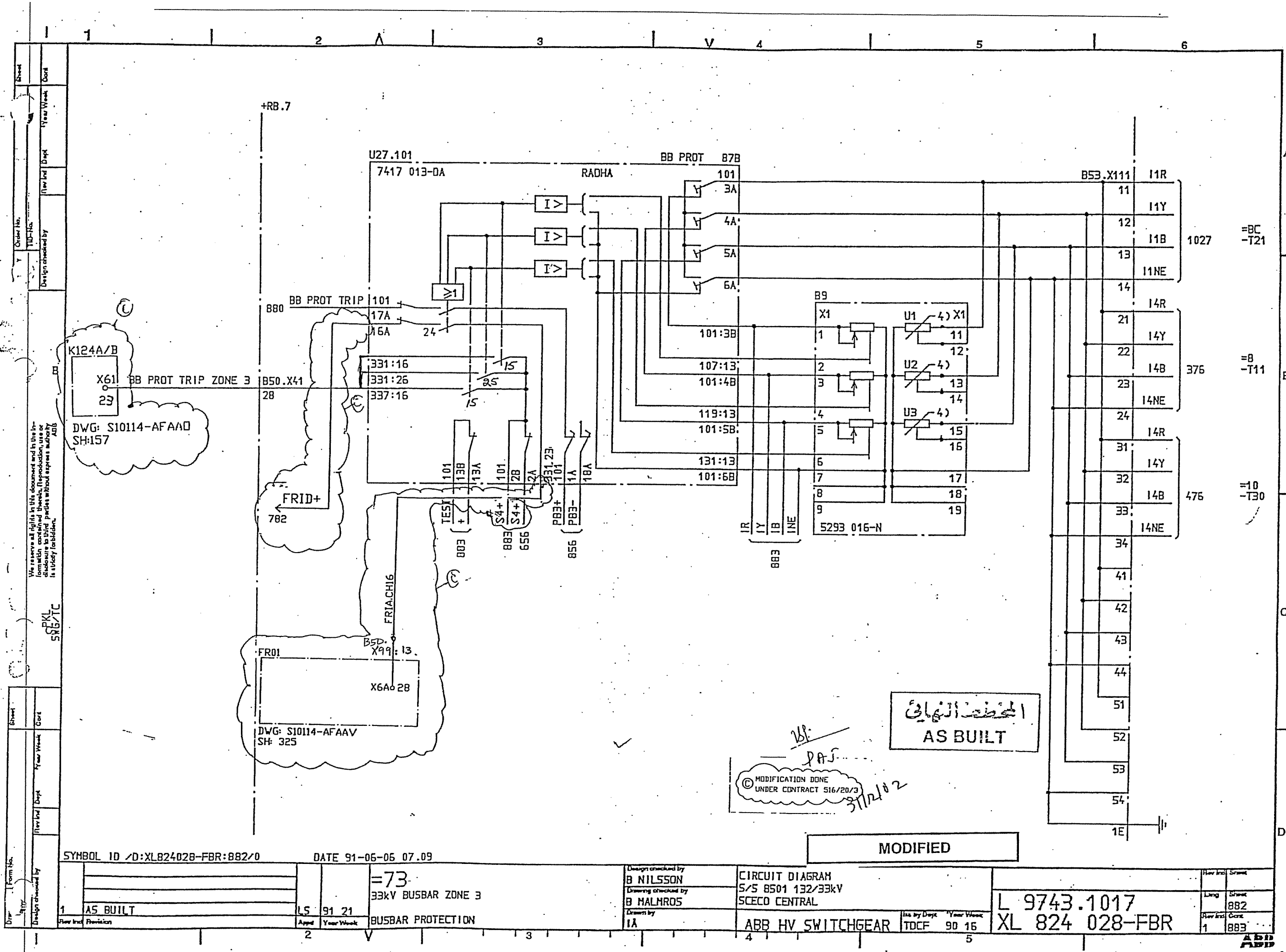






SYMBOL ID /D:XL824028-FBR:870/0		DATE 91-06-06 07.09		=73		CIRCUIT DIAGRAM		L 9743.1017	
33kV BUSBAR ZONE		VOLTAGE TRANSFORMER -T35		S/S 8501 132/33kV		SCECO CENTRAL SAUDI ARABIA		XL 824 028-FBR	
AS BUILT		LS 91 21		ABB HV SWITCHGEAR		TDCF 90 36		870	
1		2		3		4		5	





Order No.	YTD No.	Design checked by	Rev	Year	Week	Cont

Draw	Form No.	Rev	Year	Week	Cont

SYMBOL ID /D:XL824028-FBR:882/0 DATE 91-06-06 07.09

1	AS BUILT	LS	91	21	73	33kV BUSBAR ZONE 3
2						BUSBAR PROTECTION

Design checked by
B NILSSON
Drawing checked by
B MALMROS
Drawn by
IA

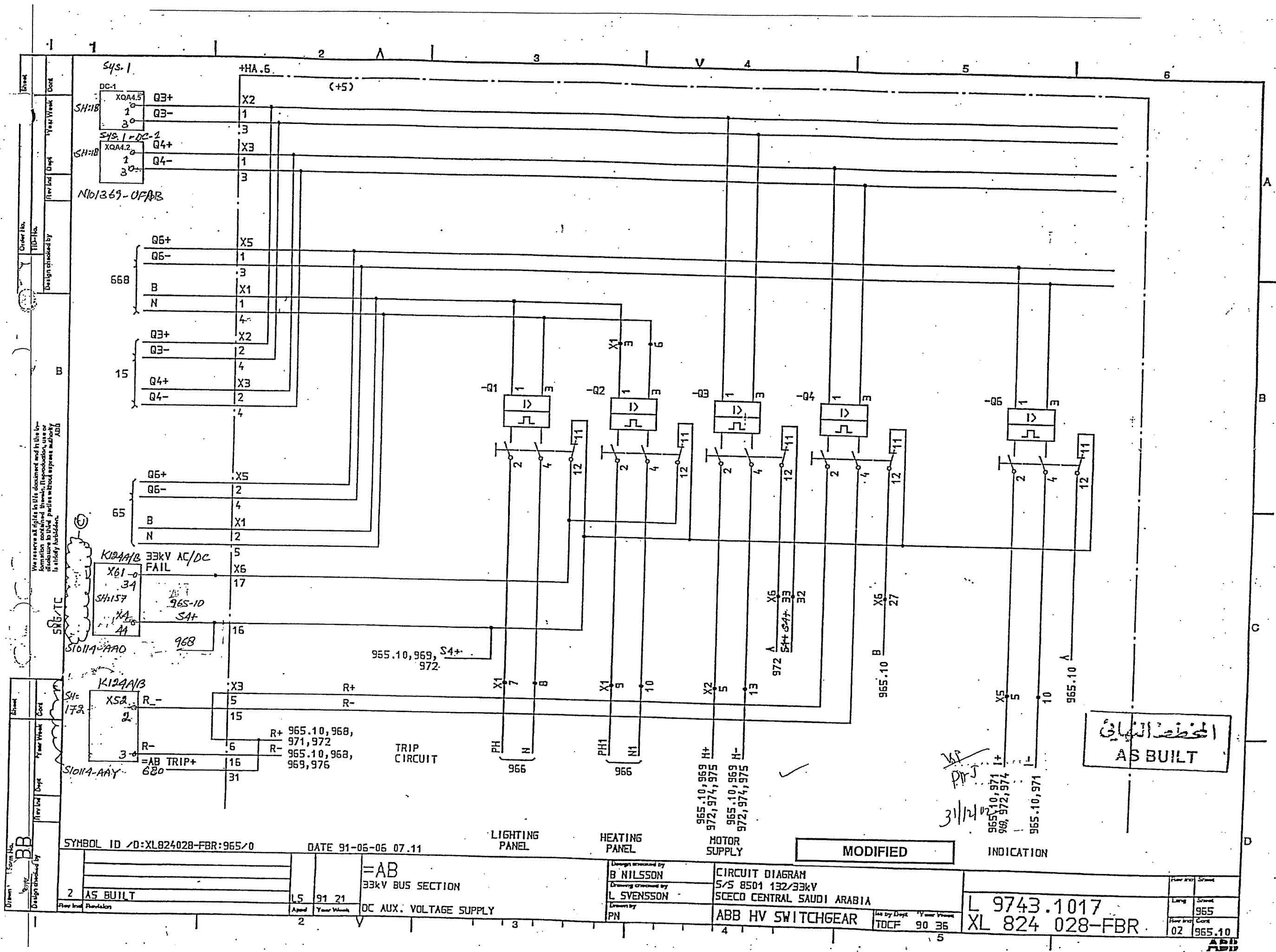
CIRCUIT DIAGRAM
S/S 8501 132/33kV
SCECO CENTRAL
ABB HV SWITCHGEAR

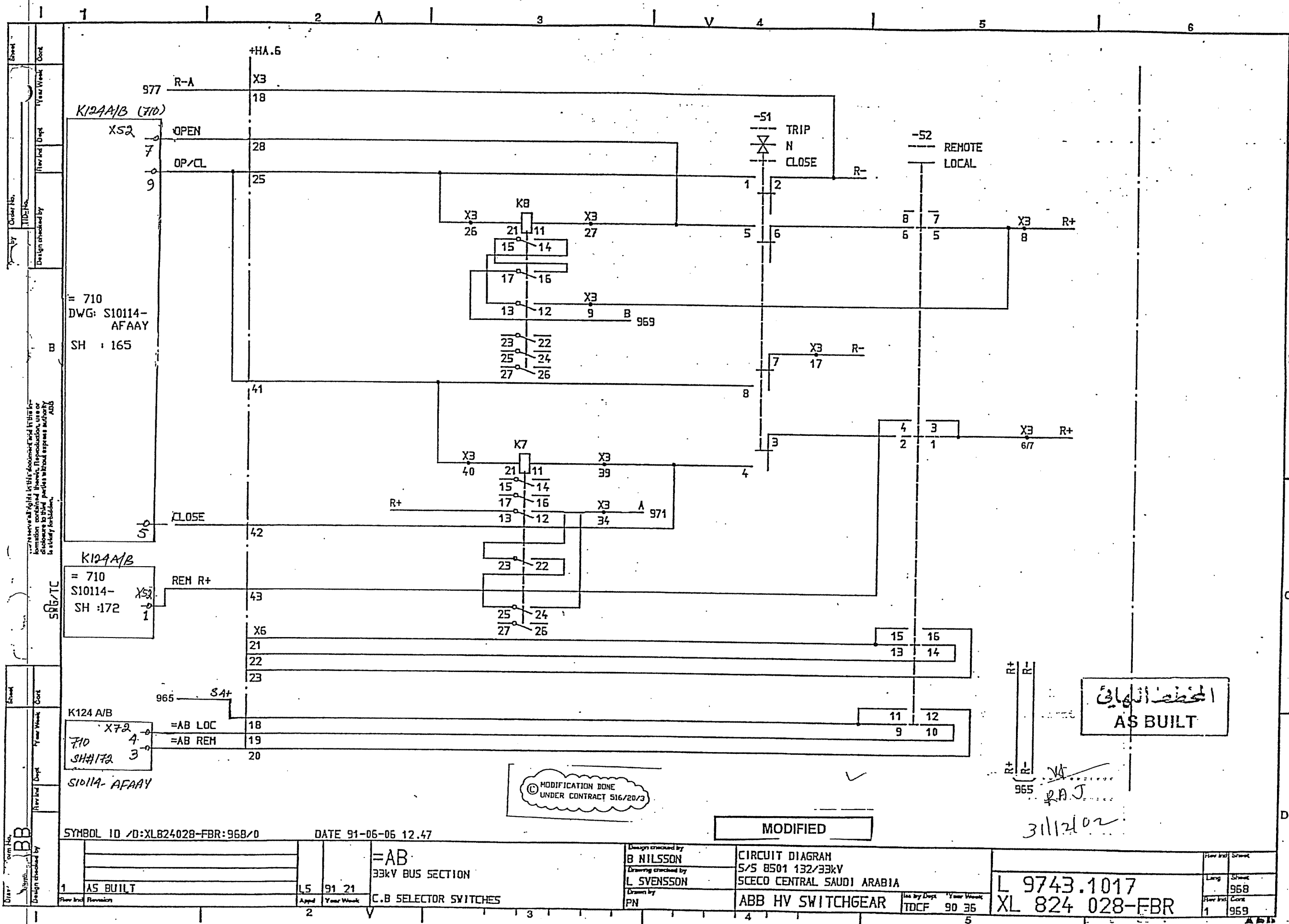
Iss by Dept Year Week
TDCF 90 16

L 9743.1017
XL 824 028-FBR

Rev	Year	Week	Cont
1			883

ADD APP





المخطط النهائي
AS BUILT

MODIFICATION DONE
UNDER CONTRACT 516/20/3

MODIFIED

3112402

SYMBOL ID /D:XL824028-FBR:968/0		DATE 91-06-06 12.47		=AB		CIRCUIT DIAGRAM		L 9743.1017	
AS BUILT		L5 91 21		33kV BUS SECTION		S/S 8501 132/33kV		XL 824 028-FBR	
C.B SELECTOR SWITCHES		PN		ABB HV SWITCHGEAR		TDCF 90 35		1 968	
								1 969	

